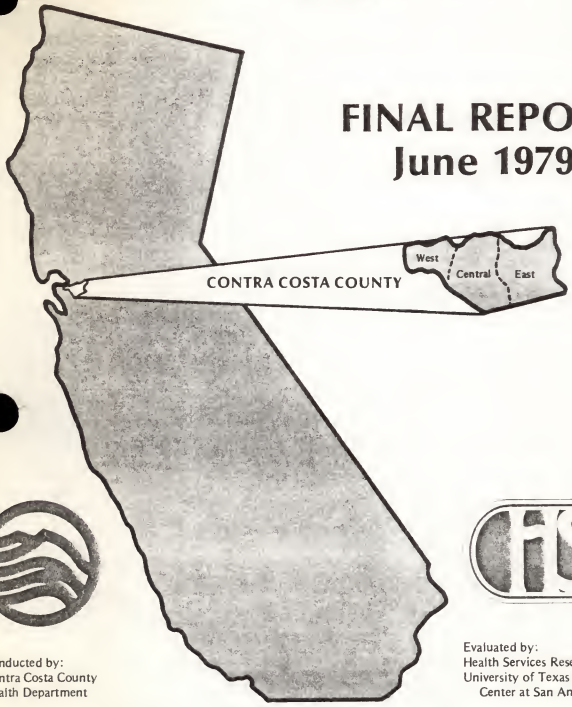
CONTRA COSTA COUNTY, CALIFORNIA
EPSDT DEMONSTRATION
1973-1977



FINAL REPORT
June 1979

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Contra Costa County, California

EPSDT Demonstration

1973--1977

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(Final Revision)

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*An Executive Summary of this Report has been published and bound separately.

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HSRI staff who had detailed involvement included Jim Titley, Chief of Data Processing, HSRI, who built the computer data system; Fred Fiedler, Ph.D., research scientist; and John Andrews, research assistant. Laverne Butler, Ann Curtis, Mae Rooks, Jo Ivan, and Judy Adams typed the many versions of this report until it was developed in its current format.

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CHAPTER 1

INTRODUCTION

This report describes a demonstration project for the Early and Periodic Diagnosis and Treatment (EPSDT) Title XIX Program, conducted between July, 1973 and June, 1977, by the Contra Costa County Health Department, headquartered in Martinez, California, and evaluated by the Health Services Research Institute (HSRI) of The University of Texas Health Science Center at San Antonio, Texas. The grant funding was awarded by the office of Research and Demonstration of the Social and Rehabilitation Services of the Department of Health, Education and Welfare (now Health Care Financing Agency) to the California State Department of Health, who in turn, contracted with the Contra Costa County Health Department. The basic goal of the project was to provide a demonstration of the implementation of EPSDT in a health department in such a way as to improve the quality, accessibility, utilization, and follow-up of pediatric health care services in the targeted low-income areas of Contra Costa County by:

1. Developing one-stop service models for delivery of comprehensive screening, with linkages for diagnosis and treatment.
2. Increasing program effectiveness through utilization of a monitoring (tracking) and case management system.
3. Developing linkages and coordinating services among public and private child health services in the target areas.
4. Increasing citizen participation in the design and delivery of health care services.

5. Emphasizing health education for target area children and their parents.

Contra Costa County, with a land area larger than the state of Rhode Island, has a multi-ethnic population (Anglo, Black, Spanish-surname, and oriental) residing in urban, semi-urban, and rural areas.

The following results are indicative of the overwhelming success which the project experienced:

1. The Contra Costa County Health Department adopted the EPSDT clinic format and forms for all Medicaid (called Medi-Cal in California) eligible children in the entire county and also adapted the well-conferences and the WIC program screening for non-Medicaid children to the EPSDT format.
2. During the first fully-operational four months of the project, more children were screened, diagnosed, and treated than the combined total during those corresponding four months for each of the previous three years in the child health conferences run by the health department.
3. The screening conducted in Contra Costa County accounted for more than 20% of all screens reported for FY '75 for the entire state of California (the county represents approximately 3.5% of all AFDC eligibles).
4. The computerized data base at HSRI, containing the results of more than 19,000 screens performed on 10,000 children, combined with the project's cost data and an operating environment highly typical of nationwide EPSDT programs, has provided the most reliable input

available for the cost planning for the proposed Child Health Assurance and Primary Care Program. This irreplacable data base is currently being temporarily maintained by county and university funds. It constitutes one of the few longitudinal histories of child health available.

5. Project staff have provided significant input for the implementation of the State's Child Health and Disability Prevention Program (CHDP). Dr. Orlyn Wood, the Health Officer for Contra Costa County (and the original project director), has been appointed to the State CHDP Advisory Board. CHDP has responsibility for all Medicaid screening and for ensuring that all children registering for public school receive an EPSDT-type screen.
6. The tracking system concept, developed in Contra Costa County, has experienced such success that it now serves as an operating example and has subsequently been adopted by both the states of California and Texas.
7. As a result of the interest generated by the EPSDT project in Contra Costa County and of its findings and research experience, that the county teenage population is not being adequately served, a new project -- "Delivery of EPSDT to the Adolescent" -- has been funded.

This report adheres to the following outline in describing the background, techniques, results, and special studies involved in the Contra Costa County EPSDT project.

Chapter 2 describes the background of the project setting and the demographics of the target areas within Contra Costa County. Early organization and implemen-

tation procedures and problems are discussed. The screening clinic organization and procedures are presented, as well as the results of a queuing study, showing times spent at each station in the clinic.

Chapter 3 describes the techniques of outreach employed to secure client participation and the follow-up techniques required to get the children to treatment. Outreach and follow-up experiment results are presented and summarized.

Chapter 4 discusses screening results in terms of volume screened, types of problems found, and the yield of various screening procedures. In addition, the client's previous utilization of services is presented and the resulting effect on findings discussed. The dual screen study is described and summarized. The degree of follow-up achieved for certain problem areas is also presented.

Chapter 5 utilizes the data base to address detailed questions of evaluation, such as how findings differed according to ethnicity, location, Medicaid status, and periodicity.

Chapter 6 discusses the costs of the program and the Medicaid treatment cost impact study, conducted with the use of a small sample of beneficiary profiles.

Chapter 7 presents the results of a client attitude and provider satisfaction study.

Chapter 8 provides a concise summary of important project findings and a set of recommendations for EPSDT programs, resulting from project activities. Detailed analyses which have been conducted for specific pruposes and provided to program management have been ommitted here in the interest of providing a more concise report.

CHAPTER 2

BACKGROUND AND IMPLEMENTATION AND CLINIC QUEUING AND STAFFING STUDY

This chapter presents the geographical, historical, and organizational aspects of the project in order to allow an understanding of the reasons underlying the final project design and the specific evaluation analyses which were conducted. In addition, the screening procedures, staffing, and client flow are discussed in order to provide a basic concept of the overall services being delivered.

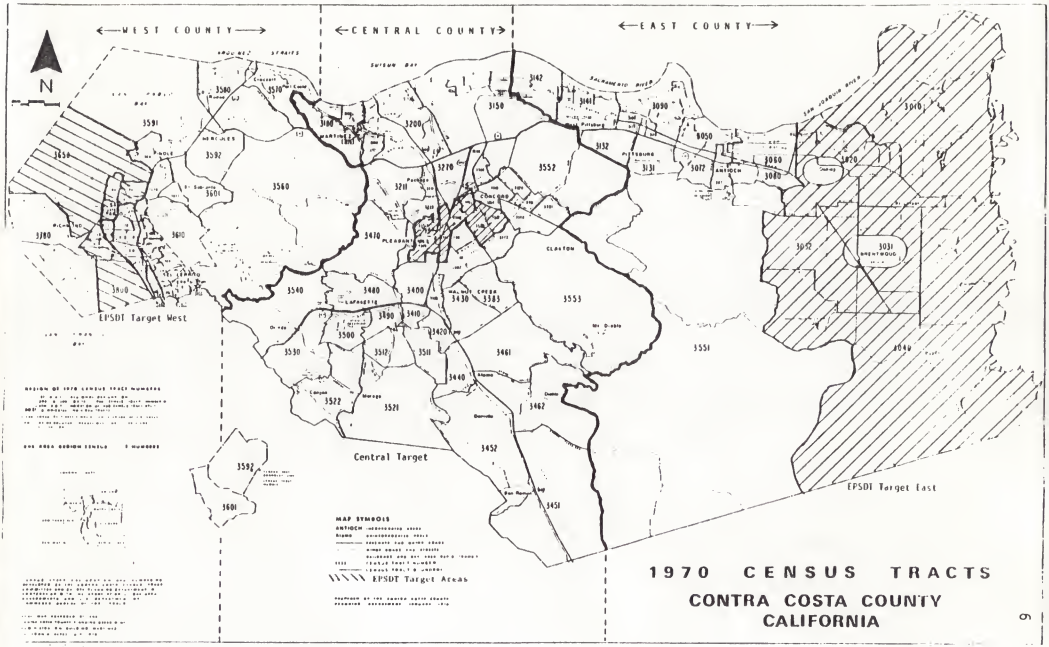
Geographic and Demographic Mix

Contra Costa County is located along the eastern coast of the northern part of the San Francisco Bay, east of San Francisco, north of Oakland and Berkeley. A census map of the county is shown as Figure 2.1. The map has an inset which gives a perspective of its location in relation to San Francisco. In 1970, the census population of Contra Costa County was 558,389[1] persons, 93.6% of whom reside in urban areas and 6.4% of whom reside in rural areas. The rural and urban areas are geographically divided by the 4,000 foot Mount Diablo. Another range of hills, running north and south, divides the two urban areas. Thus, the county is divided into three areas (West, Central, and East) by two major natural barriers. The map in Figure 2.1 has additional markings which indicate the resulting Health Department divisions of the county into West, Central, and East. These areas also represent three different life styles. West County, with a population of 78,200[2] and Richmond as its major city, has an income

[1] By 1973, the population was 593,800 (which was .28% of the total population of the entire U.S.).

[2] July 8, 1974, Sales Management Magazine.

FIGURE 2.1 MAP OF CONTRA COSTA COUNTY, HEALTH DEPARTMENT SUBDIVISIONS, AND PROJECT TARGET AREAS



distribution showing 33% of the population with incomes below $8,000 per year (as compared to 25% for the total county) and has a racial composition[3] of 44% Black, 40% Anglo, 14% Spanish surname, and 2% other. Central County, however, except for the northern shoreline, where oil refining is the major industry, is a bedroom community for business and professional people in the Bay Area, and includes Walnut Creek, Pleasant Hill, and Concord. The major city of interest for this project is Concord. Compared to Richmond, Concord had a 1973 population of 98,000 and an income distribution resulting in only 20% below $8,000. The racial composition in 1970 was .4% Black, 93% Anglo, and 7% Spanish surname. East County is the rural area, with Brentwood and Oakley its major municipalities. While occupying 21% of the entire land area of the county, it comprises only 2.5% of the population. Brentwood has a population of 2,649 persons. The working population is predominantly employed as farm laborers or related agri-business. According to the 1970 census, 52% of East County's children were members of families residing in the eastern-most end of East County, which was chosen as a major target area of the project. The majority of these families had incomes under $4,000 and a racial composition of 72% Anglo, 27% Spanish surname, and less than 1% Black.

The availability of medical resources varies greatly throughout the county, with Central County having the highest per capita percentage of medical resources available. The project focused on selected census tracts for the conduct of the project. These are shown as the sub-grouping of census tracts within each area of the county. During the first three years, the focus was on the East and West

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[3] 1970 Census.

County target areas. The Central County target area was added during the fourth year. The target area in Richmond was essentially the Model Neighborhood Area, which consisted of census tracts 3760, 3770, 3790, 3800, and 3650, with census tracts 3660, 3671, 3672, and 3680 being added after the first year at the request of the Citizen Advisorty Committee. The demographic and AFDC indicators of poverty for the census tracts involved in each target area are given in Table 2.1. the data can be summarized by saying that in the West, Central and East target areas, the median income is approximately $8,000, $13,000, and $9,000, respectively, with 7,975, 1,193, and 1,099 AFDC and, therefore, Medi-Cal eligible children in 1975. The number of children over 200% poverty in 1970 were estimated to be 7,693, 1,955, and 1,671, respectively; however, the poverty and community mobility rate is not known.

Historical Background

Prior to the funding of this project, various attempts had been made to overcome some of the barriers to ongoing health care for the medically underserved population of Contra Costa County. Barriers included (but were not limited to) lack of transportation, language difficulty, location of medical facilities outside poverty areas, lack of day care centers, low health priority, and a lack of knowledge regarding health and preventive medical care among the low income population. A large segment of the underserved population, had in the past, received only episodic care.

Preventive services for children in the less affluent population was largely provided by Public Health Nurses through Child Health Conferences, and acute treatment services had been available through three large outpatient clinics under the direction of the County Hospital. The pattern of receiving care was not appreciably changed in 1967 with the availability of private medical services under Medi-Cal.

TABLE 2.1

Detailed Demographic Data of Each Project Target Area
By Census Tract

Census Tracts	Total Persons 1970	Median Income	% Black	% Mex. Amer	Number Persons Under 18	Number of AFDC Children 10-6-75 Age 0-4	Age 5-12	Age 13-21	% of Population 200% Poverty
West Target									
3760	5,254	6,434	73.7%	14.4%	2,050	292	468	341	51.4%
3770	5,511	8,233	32.3%	17.9%	1,745	293	410	245	38.4%
3790	7,198	7,717	90.0%	7.3%	3,137	417	626	472	49.6%
3800	2,924	6,063	93.7%	4.8%	1,365	247	407	289	60.5%
3650									
In Richmond:	2,873	7,258	95.9%	1.2%	1,223	302	537	436	38.4%
In San Pablo:	3,177	4,822	92.4%	4.4%	1,353				66.6%
3660	7,885	9,242	1.5%	14.1%	2,982	222	339	165	26.2%
3671	5,234	13,495	19.0%	6.2%	2,220	52	151	134	12.5%
3672	3,618	9,884	1.9%	15.2%	1,416	62	160	102	28.4%
3680	6,770	8,078	2.3%	15.8%	2,226	300	342	166	33.6%
Central Target									
3361	5,099	11,480	0.1%	0.1%	1,263	79	110	40	18.2%
3362	6,561	10,474	0.2%	7.2%	2,516	146	156	80	24.2%
3371	1,353	17,000	---	4.7%	543	2	14	7	2.6%
3372	4,490	15,571	0.2%	0.9%	1,544	53	77	23	11.1%
3230	4,924	13,578	0.2%	7.9%	2,028	15	42	20	9.4%
3240	5,888	11,247	---	9.7%	1,854	32	75	76	21.1%
3250	6,690	12,757	---	3.8%	2,341	39	61	46	14.9%
East Target									
3010	2,134	8,507	0.1%	9.0%	534	14	21	20	29.8%
3020	4,670	8,922	0.1%	28.8%	1,666	113	212	182	34.3%
3031	3,495	9,129	0.1%	40.0%	1,315	64	123	115	33.7%
3032	2,137	10,416	0.1%	27.4%	799	35	81	58	37.0%
3040	1,453	9,588	0.2%	15.8%	527	16	29	16	38.4%
						2795	4441	3033	

The Health Department was also in charge of administering (primarily through the private sector) the federal/state/county funded Crippled Children's Service Program in which any family of four, with an income below $10,500, could be eligible for medical care for chronic handicapping conditions. Thirty percent of the referrals came from the pediatric wards of the hospitals, with the remaining 70% coming from the private medical sector, Public Health Nurses, and Social Services. It was the national consensus that low income children in need of such CCS services were often not being identified and, thus, were not receiving the services. During the period from July 1971, through June 1972, 1,600 children received such services in Contra Costa County and in FY 1972-1973, 1,444 children received services under CCS and Medi-Cal (CCS would provide diagnostic authorization for Medi-Cal). Many children were receiving inadequate health care because they either were not entering the system at the appropriate time, or were not receiving proper screening. As it turned out, approximately five children were referred to CCS each month from the West and East County target areas for orthopedic, cardiac, hearing, plastic surgery, kidney, bladder, orthodontic, neurological, and other problems. The various types of problems served by CCS in June 1976 are shown in Appendix A.

Several developments took place in Contra Costa County during the late sixties and early seventies which inspired a concentrated effort to identify health problems and provide remedial care to all children in the medically underserved population.

In 1970, a Health Care Outreach Program was funded in Richmond. This project obtained the services of about 24 well-trained and experienced indigenous

Health Care Outreach workers through a 1115[4] project. According to the final evaluation report[5] for that project, between August 15, 1972 and July 1, 1973, the aides and their medical consultants provided various services, including the following: (1) health education to 944 clients; (2) follow-up services to 1,086 clients; (3) transportation services to 361 clients; (4) medical emergency assistance to 142 clients; and (5) translation assistance to 127 clients. One problem encountered in that project was stated thus, ". . . after the client was referred for service, the aide had very little direct control over whether the client obtained health care. If difficulty was encountered, the aides tended to get discouraged."[6] Another problem was described thus, ". . . the aides would refer clients for assistance in a serial fashion. That is, they would refer for immunizations, follow-up to see of the client had received care, and then refer for some other need on the service plan."[7]

In 1969, Children's Hospital in Oakland, in an adjacent county, had begun a pediatric nurse preceptorship training program. The Health Department sent many nurses for this training. In 1971, the County Medical Services established a satellite acute care clinic in the center of the poverty area of Richmond;

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[4] 1115 is a program administered by Health Care Financing Administration (formerly Social and Rehabilitation Service), which provides match money to states for innovative service delivery projects.

[5] Final Evaluation Report, Health Care Outreach Project, Title XII, Section 1115, Research and Demonstration Project, grant no. 11-P-57098-0-01, November 1, 1973, Contra Costa County Human Resources Agency.

[6] Ibid.

[7] Ibid.

also in 1971, the County Board of Supervisors created a Human Resources Agency which combined Public Health, Social Services, and Medical/Mental Health Services under one single authority. The agency was designed to coordinate the provision of human services in the county. In 1967, Congress passed an amendment to Title XIX of the Social Security Act requiring early and periodic screening, diagnosis, and treatment of all children under the age of 21 eligible under the Medical Assistance Program.

In 1973, this law had not been fully implemented in California or in the majority of states. The Social and Rehabilitation Service was anxious to stimulate the EPSDT program for the screening, diagnosis, and treatment of the medical, dental, and developmental problems of the 12 million Medicaid eligible children. The guidelines were not released by HEW until August 1972, and by July 1973, less than 1% of the eligibles had been screened. Concurrently, the terminating Health Care Outreach Project had found that more preventive services were direly needed.

In June 1973, the Human Resources Agency of Contra Costa County developed a grant application proposing to provide early and periodic screening, diagnosis, and treatment to all children under 21 in two underserved areas of the county. In July 1973, a demonstration grant award of $296,705 was made by the Department of Health, Education, and Welfare to the State of California for Contra Costa County. This was one of four such grants by SRS in the United States, and the only one to an agency of county government (the key pages of the initial proposal are included as Appendix B). The Human Resources Agency, the umbrella agency for the Departments of Medical Services, Social Services and Health, assigned the project in August 1973 to the Health Department as the lead agency, with County Medical Services/Mental Health and Social Services as co-participants. The primary

objective of the project was to identify and treat all abnormalities found in children under the age of 21 in specific areas, while allowing for considerable freedom of methods and emphasis. The Health Department placed great emphasis on health education to decrease episodic care, thus raising the consumers priority of preventive medicine and behavior to the extent that health maintenance, rather than treatment of illness, would become the primary goal of the parent and child. Mental Health was primarily interested in identification and management of children with developmental disabilities, and Medical Services aided in providing family medicine and continuity of care. The Social Service Department assisted with consultation, referrals, and direct services for children and their families on referral by the project staff.

The ten remaining Health Care Outreach workers were transferred from the prior project to the EPSDT project.

The plan of service was for physicians and physician-supervised pediatric nurse practitioners to conduct the examinations and refer suspected abnormalities found in screening for diagnosis and treatment. Outreach on a house-by-house basis was to be done by Health Care Outreach workers. They also provided information on health and assisted clients to complete referrals. Public Health Nurses and Social Services workers accepted the primary responsibility for more complex and technical referrals.

In Richmond (West County), the project was located in the county building on Eighth Street which houses the acute care medical clinic of County Medical Services and a Mental Health Project. In East County, the rural area, space was not readily available; so, assistance was sought from the Advisory Board. Early in the project, Citizens Advisory Boards were developed for Richmond and East County. These Advisory Boards, after meeting together several times, decided to hold separate meetings because of the distance involved. The

East County Advisory Board accepted the responsibility of finding quarters for the project in the area. East County Clinic, beginning in April 1974, was housed in inadequate space in a county building in Oakley (see Figure 2.1 for the general location of the community of Oakley). Two full-day clinics were initiated by using Health Department staff for patient recruitment and follow-up. A clerk was loaned from the Health Department for the two days per week until regular project staff could be employed. The Citizens Advisory Board for East County finally made arrangements with the Brentwood Health Center, a community organization, to renovate a building in Brentwood as a clinic facility. The renovation was completed with active community participation. An open house, hosted by the Brentwood Soroptomist Club, was held on October 2, 1974 to celebrate the opening of the new joint facility with local political leaders, citizens' group representatives, and County Human Resources Agency participating and was widely reported by the local press.

During the first three years, services were provided five days a week, three in the Richmond area, and two days in the Brentwood Clinic. Since the Richmond Eighth Street Clinic was to one side of the project area, the advisory committee recommended satellite clinics be established in order to make screening services more accessible to residents living in outlying areas of the project area. In response to this recommendation, and in keeping with the Health Department's desire to accomplish the project's objective to increase the accessibility of screening services, arrangements were made to integrate EPSDT with the Child Health Conferences which were held at the MacArthur Church in San Pablo, which is immediately adjacent to Richmond and within the project area (this was called the satellite clinic).

Children who had been seen in the Child Health Conference (because of accessibility), but were eligible for EPSDT, became EPSDT participants. Siblings of these patients, formerly not eligible for Child Health Conferences because of county policy, received screening through the satellite clinic, thus alleviating the need for taking children to different sites for screening. The MacArthur Church satellite clinic operated on the first and third Monday of each month. The staff of the Eighth Street Clinic,being used in the satellite clinic,cancelled services on Mondays. To further decentralize services, on the first and third Tuesday of each month, another satellite clinic was at the Martin Luther King Center in Richmond, a third one was at Shield's Ried Center.

Early in the project, a series of contacts was made with various community groups whose cooperation was required for the complete process of recruitment, screening, and referral of children. Physicians, dentists, optometrists, and audiologists were contacted and their cooperation requested. Hospital staff meetings were attended to inform the local physicians of the intent of the project. Schools were contacted and, in East County, there was enthusiasm especially from the district superintendents and the school nurses. The EPSDT project, in keeping with its goals, maintained close contact with the community groups and members. The project reported to the Model Cities Health Committee on a monthly basis. Communication and coordination with other related community agencies and projects included:

Boys Club
Richmond Child Development Group, Inc.
Black Student Union of Contra Costa College
Contra Costa College Paramedical Training Program
Apostle of Truth Child Care Center
Richmond Unified School District Preschool Program
First Lutheran Baptist Church of Brentwood
First Lutheran Baptist Church of Oakley
South Side Center

Gompers Continuation High School
Girls' Club for Richmond
Iron Triangle Neighborhood Council
Social Service Department
Welfare Rights Organization
Schools in Richmond
P.T.A. Groups
Dr. Flasher - Mental Health Services, Richmond
Martin Luther King Center Staff
Shield-Reid Center, North Richmond
N.Y.P. Neighborhood Youth Program
Social Workers and Eligibility Technicians
Model Cities Staff
Dr. Dew, Child Diagnostic Services, Richmond
Social Workers
High Input Project (HIP), Dr. Devore, Richmond
S.S.I.
WIC Project Staff
Spanish Speaking Union

In addition to contact with the community organizations, supportive services to individuals in the community was provided. Community Workers (CW) provided health education to the families being served by the clinic, e.g., nutritional education, immunization, child care, etc. They also counseled families having other problems and gave assistance, wherever possible, to locate help with social and financial problems through other community resources. Community health workers provided translation services for Spanish-speaking people in the clinics. The Health Department also had bilingual Nurse Practitioners and clerks in the Brentwood Clinic. The CW's also maintained and provided translation services for children referred for diagnosis or treatment, if needed. PTA groups were supportive. The relationship with Head Start Programs was very effective and all Head Start pupils needing a physical examination were screened. Neighborhood youth programs, boys clubs, and the Recreation Department in Richmond were actively involved to the extent of forming a youth advisory group which met separately from the Citizen Advisory Board.

During the life of the project, four additional programs developed in the county which were closely related to the EPSDT project. A Hypertension Project, funded by Regional Medical Programs and under administrative guidance of the West Contra Costa County Health Care Committee, was begun in July 1974. Adults accompanying children being screened in the EPSDT Clinic had their blood pressure checked by the screening nurse and the reports were provided to the Hypertension Project staff. The Health Department obtained funding from Health, Education and Welfare for a Lead Study; a blood lead determination was added to the screening test provided. The third program to be integrated was the Health Department Women, Infant and Children (WIC) Nutritional Program which provides food vouchers to children under age four, and pregnant and nursing women at nutritional risk. Health Department outreach workers, supported by the Federally funded Immunization Assistance Program, coordinated their efforts in the EPSDT project area to enhance the impact of the staff and avoid duplication of effort to a mutually desired goal.

The project had been in operation for 2 1/2 years when attention began to focus on the health problems of the population of Central County and how conditions there compared to those which had been found in East and West County. Early experience and statistical reports on the project showed differences between the experience of the West and East County EPSDT clinics. What was successful in one area was not successful in the other. Transportation, which was expected to be a problem in the rural East area, proved not to be; conversely, in the West where there was reasonably enough public transportation to successfully operate the project, large amounts of staff time had to be devoted to patient transportation. In the West, clients were frequently late for appointments and showed considerable concern about the time screening took. In the East,

clients frequently arrived an hour or more early and stayed after the child was screened as the clinic waiting room became a "community center".

The two-area project was producing "facts", but many of the "facts" were unexplicable. Which was normal and which was the variation from the norm? With the initiation of the California EPSDT program, there was a potential to fund services to an expanded population including Central County. To incorporate the information obtained in the provision required additional research support and, in addition, there was no appropriate facility in Central County to provide services. It was felt that many low income Anglo children of the working poor living in Central County might not be receiving the services which they needed. In addition, the clinics being used in Central County were poorly equipped and cramped for space. Therefore, a project amendment and extension was obtained to allow for: (1) the renovation of a building into a suitable new clinic; (2) screening to be carried out with county funds in this Central County facility for a minimal one-year period while other county-wide clinic sites were being phased into a regular county program; and (3) SRS support of several special studies which had not been accomplished in the East or West County, such as "dual screening" of children by different practitioners to determine the extent of false negatives, and a follow-up study.

In the various statistical reports presented later, the reader will quickly recognize that the inclusion of the Central County in the project greatly enhanced the information gained from this project. The clinic acquisition and renovation took longer than had been expected, but the site opened for screening in January of 1976. The nursing service accepted major responsibility for the Central County screening, thus incorporating the service into the department.

From the onset, the project was financed by a Department of Health, Education and Welfare grant which covered salaries, equipment, space, and much of the administrative cost. Not covered by this grant was the cost of treatment. Medicaid covered the majority of treatment costs, State Crippled Children Services a small amount, the Alameda-Contra Costa Dental Association provided some funds for dental care, and occasional use was made of the Berkeley Free Clinic and Free Clinic for Spanish Speaking in Oakland. Some private physicians and dentists were willing to see children without charge in hardship cases.

Role of the Health Services Research Institute

HSRI is a multi-disciplinary group of researchers at The University of Texas Health Science Center at San Antonio. It was originally funded in July 1972 as a SRS Regional Research Institute, to study the delivery of health care services to the low income population and was directed to study the implementation of the EPSDT Program. At the time the Contra Costa Project was being conceptualized, a four state study to evaluate the implementation of EPSDT had been completed, a data system had been developed for a neighborhood EPSDT clinic demonstration in San Antonio, and a seven state (including California) study of tracking systems for EPSDT was in process. Further, HSRI had been asked to develop a Common Data Base for Demonstration Project Evaluation. Funding for evaluation of EPSDT demonstration projects was to come from a combination of contracts with local projects and a grant from SRS. Such a contract was negotiated with Contra Costa January 1974. HSRI staff worked with the Health Department staff to develop appropriate forms, data systems, and special studies. While the project was periodically given feedback of evaluation findings, this is the only complete report of all evaluation findings. On on-site evaluator, Mr. Rodney Gardner, of

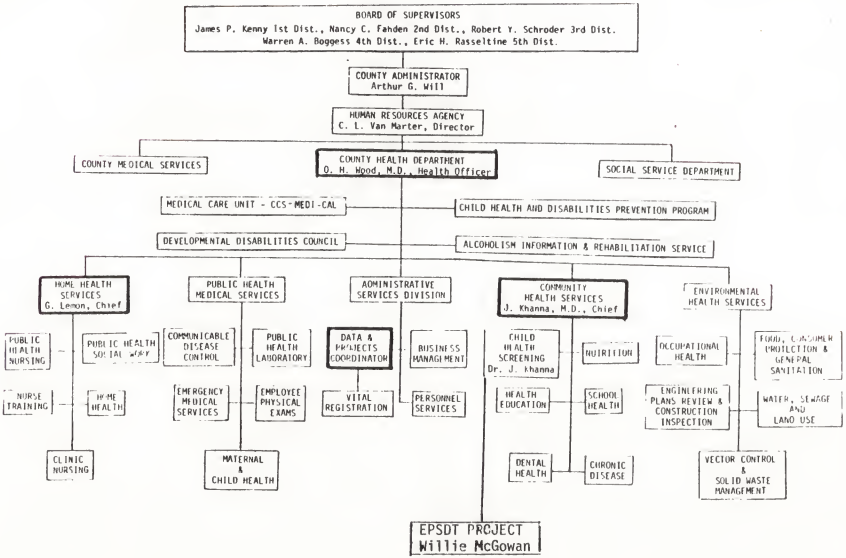
Human Development Associates in Berkeley, California (the same individual and firm which had previously evaluated the Health Care Outreach Project), was employed to assist in the conduct of the various studies as HSRI local representative. (See Appendix D for a discussion of the data system.)

Organization of the Project

Figure 2.2 contains an organization chart of the Human Resources Agency as of January 1977 with the project location indicated in dashed lines; this was essentially the structure during the greater part of the project. At the time of the project implementation, Dr. Orlyn Wood was the EPSDT project director and also Chief of Community Health Services. The CHDP[8] program was not yet in existence at that time. Later, when Dr. Wood became Health Officer, Dr. Jogi Khanna, a pediatrician, was appointed Chief of Community Health Services and EPSDT project director. The outreach aides were organizationally under a project coordinator (Willie McGowan), an L.V.N. with a Masters Degree in Public Health. The nurses staffing the clinics were under the supervision of the Chief of Home Health Services (Genelle Lemon). The forms and contract for the project were under the supervision of the Data and Project Coordinator (Don Meyer). Some physicians assisting with the clinics were employees of County Medical Services, which supplied services for screening supervision and minor on-site treatment under contract with the Health Department. As can be readily seen,

[8]Child Health Disability Prevention Program--a child health assessment program in California for all school enterers and also EPSDT for 0-21 year old Medicaid children.

Figure 2.2
Contra Costa County Human Resources Agency Organization Chart
(at the time of the project)



such splits in organizational responsibilities and resulting role conflicts--i.e., between outreach aides and Public Health Nurses, M.D.'s and Nurse Practitioners --and the transition of Public Health Nurses from visiting in homes to staffing clinics, all contributed to personnel problems in the early stages of the project. HSRI conducted a Staff Attitude Study, which found that most personnel were generally very satisfied with the program; however, some problems were indicated. Community Health Workers felt that they were allowed insufficient input into the planning process, that too many conflicting demands were made upon their time, and that their knowledge of ways to motivate clients was discounted by the nurses. The nurses, on the other hand, felt that the CHW's were frequently not qualified to perform follow-up. It became clear that policy changes suggested by the project coordinator were not being implemented until the nurses received the same message from their nursing supervisors. Over time, organizational changes were made and channels of communication simplified and clearly delineated. As time passed, the project director learned that when operational and planning responsibilities were given to nursing services, greater cooperation resulted and the clinic ran more smoothly. The thrust of this discussion is that when innovative programs are conducted within existing program structures, an "organizational development period" of six to eight months is required to allow existing personnel to get over being threatened by new ideas and mixtures of skill levels. In organizing the structure of an innovative project such as this one, a choice must be made to either make the special project an isolated entity, with all employees reporting to the project director; or to provide, through established program channels, written policy statements, extensive meetings, and team review of client records, a group decision-making process which will determine how the project is to proceed to best accomplish its goals. There are costs in incorporating projects, but concurrent benefits are that when project funding ends the

experience gained by the project does not disappear as the specially employed project staff disperses.

The Screening Procedures

The EPSDT screen was set up to meet the requirements of the California Medi-screen (EPSDT in California at the time) program, and, therefore, the tests required depended upon the child's age and periodicity of screening (to be discussed later in the report). The screening clinic consisted of the following stations:

1. Registration and measurements (including head circumferences).
2. Hearing test--using VASC audiometer. Children being referred were retested at another time prior to referral.
3. Vision test--using Snellen E Chart (Titmus was used later in some clinics). Children scoring low were scheduled for a retest before being referred.
4. Draw blood--blood samples (finger-stick and two capillary tubes) were drawn for the analysis by the County laboratory. Checks were made for hematocrit, hemoglobin, sickle cell trait, G6PD (enzyme deficiency in Black children). Laboratory results were available in one to two weeks. Children showing problems were rescheduled for a screening recheck.
5. Immunization status--checked for current immunization status. The County does not keep centralized records on immunizations, so families had to locate their cards.
6. Physical examination and health education--an unclothed physical was given, with time allotted for an explanation of current problems and how to prevent their recurrence in the future.

In the beginning, the vision testing was conducted using the Snellen E Chart, but it was found that the Titmus tester was much more accurate, thus greatly reducing the rate of false positives. So, after July, 1975, the vision testing was conducted using the Titmus tester both in Brentwood and Richmond.

The blood samples were analyzed at an off-site laboratory, initially at the Health Department laboratory, and later at the County Medical Services laboratory.

An important aspect of screening was the "retest before referral" policy, which was employed particularly in the vision, hearing, urine, and sometimes the blood portions of the screen. Children were referred directly from screening in these areas only when there was a clear-cut problem requiring treatment. The normal procedure was to have the child return for a recheck in two weeks. If the vision or hearing recheck screen was again positive, a referral was made. This saved approximately one-half of initially indicated referrals from needless diagnostic visits and the concurrent medical costs as will be shown in the data section on screening findings, and the time study of this chapter.

In the contract for the conduct of the project by the County, the State specified the established State standards for screening procedures, periodicity schedule, and clinic staffing requirements. The section of the contract dealing with these items is included as Appendix D. The periodicity schedule called for health status evaluation (unclothed physical) at months 2, 4, 6, 9, 12, and 18 of the child's life, and once each year for years 2 through 20. Dental examinations began at age two years. Hemoglobins were to be done at 18 months of age and for years 2, 3, 5, 7, and 8 through 20. A urinalysis was to be done at 18 months of age and at years 2, 3, 5, and 17. The schedule is attached as Figure 2.3.

Figure 2.3
State Periodicity Schedule for Child Screening

Age	SEHS[1]	Dental	Immunizations	Vision[10]	Hearing[11]	Laboratory
Within 2 mos.	Yes		DPT[3]			PKU[2]
4 mos.	Yes		DPT TOPV			PKU[2], UA[8]
6 mos.	Yes		DPT TOPV			PKU[2]
9 mos.	Yes					PKU[2], Hb[9]
12 mos.	Yes		Measles[5] Rubella Mumps			
18 mos.	Yes		DPT TOPV			Hb, UA
2 yrs.	Yes	Yes	TB Test			Hb, UA
3 yrs.	Yes	Yes		Yes[12]	Yes	Hb, UA
4 yrs.	Yes	Yes	TB Test	Yes	Yes	
5 yrs.	Yes	Yes	DPT TOPV			Hb, UA
6 yrs.	Yes	Yes		Yes		
7 yrs.	Yes	Yes				Hb[9]
8 yrs.	Yes	Yes				Hb
9 yrs.	Yes	Yes		Yes		Hb
10 yrs.	Yes	Yes				Hb
11 yrs.	Yes	Yes				Hb
12 yrs.	Yes	Yes				Hb, UA[8] V.D.R.L.[7]
13 yrs.	Yes	Yes		Yes		Hb, V.D.R.L.
14 yrs.	Yes	Yes	Td[6]			Hb, UA, V.D.R.L.
15 yrs.	Yes	Yes	Td[6]			Hb, V.D.R.L.
16 yrs.	Yes	Yes	Td[6]			Hb, V.D.R.L.
17 yrs.	Yes	Yes				Hb, UA, V.D.R.L.
18 yrs.	Yes	Yes				Hb, V.D.R.L.
19 yrs.	Yes	Yes				Hb, V.D.R.L.
20 yrs.	Yes	Yes				Hb, V.D.R.L.

1. Screening Evaluation of Health Status, maximum frequency allowable for normal child.
2. PKU tests will be done on urine until there are 2 negative tests.
3. DPT--diptheria, tetanus, pertussis
4. TOPV--trivalent oral polio vaccine
5. Separate immunizations may be given on parental request
6. Td, Dt--tetanus, diptheria (adult type). Administered only once during period 14 through 16 years.
7. V.D.R.L. (Venereal Disease Research Laboratory), R.P.R. (Rapid Plasma Reagent), or A.R.T. (Automated Reagent Test)--test for syphillis.
8. UA--urinalysis
9. Hemoglobin or microhematocrit
10. Administered only four times between ages 4 through 16.
11. Administered only once at age 3 or 4, depending upon maturity of child
12. may be administered at age 3, depending upon maturity of child.

Just as the project was gearing up to begin conducting routine developmental screening for cognitive, language, personal-social, and gross and fine motor problems, a series of articles severely criticizing the entire concept of developmental screening appeared in several California newspapers. Subsequently, the State ordered the cessation of developmental screening and appointed a special committee to study the problem. Therefore, the developmental screening was low key. The Denver Developmental Screening Test was used only when a suspected problem was observed by one of the examiners.

The persons giving the physical examination included both the M.D. and nurses (called nurse examiners) as will be discussed along with the analysis of clinic staffing. The training for the nurse examiners was a major effort of the project.

Training of Nurse Examiners

As mentioned earlier in this report, many nurses had previously attended a nurse practitioner program which had begun several years earlier in Oakland. However, this was not sufficient to train the number of nurse examiners required for the EPSDT program. As a result, the Health Department initiated its own program, headed by a Health Department contract physician. Special clinics were set aside as practice clinics, and the nurses got other types of practicum in San Francisco and at the University of California at Davis. In addition, there was in-service training for nurses and M.D.'s doing screening. The following list of 2-hour presentations--dates, topics, and speakers--provides a good example of the in-service training provided:

Date	Topic	Speaker
Oct. 27, 1975	Screening for Atypical Child Development	D. Crowther, M.D., County Medical Services
Nov. 10, 1975	Screening for Speech and Language Delays	Alice Coopersmith, Speech Therapist, Knolls Center
Nov. 24, 1975	Screening for Hyperactivity	D. Crowther, M.D. County Medical Services
Dec. 8, 1975	Screening for Behavioral and Emotional Problems	Dr. Finif Drew Anita Merrell County Medical Services

This report will not discuss training in detail, but it should be noted that reimbursement for the conduct of screening programs should be sufficient to cover the substantial costs for on-campus and/or on-the-job training. The major health manpower training programs are not yet sufficiently geared up to produce EPSDT screenors, so persons utilized in this capacity must receive on-the-job training, and have good supervision.

There is an interaction between clinic staffing, show rates, show patterns, and scheduling and staff and patient waiting time. The experience of the clinic in scheduling, staffing and timing will be presented. Then follows a generalized discussion about these matters as it may apply in a more generalized scale and also as it applies to clinic reimbursement. The data base is discussed first.

The Data Base for Staffing Patterns and Service and Waiting Times in Screening

The data for analysis of staffing, waiting times, service times and show rates, come from two major sources. The first is the on-going data system described in Appendix C in which the staff member conducting the exam recorded their code number by each screening procedure. The other was a queueing study conducted between February and April 1977 in all parts of the country. There were 107 different

clinic days and 1613 persons included in the study. This involved 484 original screens, 832 periodic screens, 211 adds[1] and 55 rechecks.[1] The percentage of total visits that were original or periodic screens varied between clinics from 73.6 to 96%. The characteristics and times involved in each visit, and the types of staff present when each person arrived, were reported on the coding sheet shown in Appendix E . In this appendix is shown several other sheets. The staff was asked to record the amount of time spent in various activities. At the end of each day, a summary was made of the staff waiting time, set-up time, etc. In addition, the appointment schedules were available for 49 of the 107 clinics. From those, the show rates were computed. The data were coded so that each clinic was an observation for the variables in the study. The analysis was viewed from several perspectives. In some cases, the information available on all 107 clinics was reviewed, and in some analyses those with a complete data set were used. Also, some clinics were defined as just for "infant screens." Since these were the smaller clinics, they were removed for some of the analysis.

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[1]The following four categories of services were:

Original Screen: A complete screen was performed on a child being seen for the first time in a health department EPSDT clinic.

Periodic Screen: Any complete screen (as defined in the periodicity schedule) on a child having already received an original screen.

Recheck: A child returned for a retesting of either the hearing or vision test, on which he had performed abnormally during the initial screen.

Add: A child returned to the clinic in order to complete a screening procudure which could not be performed during the initial screen.

Results of the Queuing Study that Describe Clinic Activity

Where the appointment schedules were available for analysis (n=67 clinics), the following characteristics were true (per clinic):

Item	Mean	95% Confidence Interval	Comments
Number children scheduled	29.38	± 2.36	Equally distributed between 14 and 35. Only in 22% of the clinics were more then 35 scheduled.
Number of cancellations	2.94	± .60	
Number of appointments kept	17.00	± 1.40	Only 7.4% of time were there more than 25 shows.
Ratio of kept appointments to scheduled appointments	58.5%	± 4.8%	84% of the clinics ranged from 35 to 78% show. Only 12% of the clinics had more than 78% show.
Ratio of kept appointments to expected (non-cancelled)	65.2%	± 3.8%	Only 10% of the clinics had more than a 85% rate of show out of expected appointments.
Ratio of kept to scheduled appointments by hour			
8:00- 9:30	64.0%	± 8.0%	
9:30-11:30	100.0%	± 0	
12:30-2:50	57.0%	± 8%	
after 3:00	73.0%	± 9%	

The foregoing information indicates that there was a wide variation in show rates between clinics, but that a clinic that can develop an on-call capability could plan to staff for no more than an 85% show rate of non-cancelled appointments. Then, when an excess appears, extra staff could be used, but would only be utilized 10% of the time. Also, the show rate early in the morning and early afternoon is very low, so it would be best to have a skeletal crew only until 9:30 and from 12:30-2:00. As shown in the next set of information, even those

who do show generally arrive late during these times.

For those persons who did show (n=1613 persons), 39.8% were late as follows:

Type arrival	No. Persons	% of total known
Late for appointment	622	39.8%
On Time	254	16.2%
Early	688	44.0%
Unknown	59	-

And by appointment time, 8:00-9:00 stands out as being a less desirable time for appointment in this clinic population.

Appointment Time Grouping	Number	Time of Show % Late	% on Time	% Early	% within one-half hour of appointment
1. 8:00-9:00	199	54.8%	17.6%	27.6%	10%
2. 9:30	137	44.5%	11.7%	43.8%	5.3%
3. 10:00	160	40.0%	18.1%	41.9%	3.2%
4. 10:30	122	38.5%	15.6%	45.9%	5.0%
5. 11:00-12:30	146	37.0%	8.2%	54.8%	4.9%
6. 1:00	174	44.3%	25.3%	30.5%	5.1%
7. 1:30	177	35.0%	15.8%	49.2%	5.7%
8. 2:00	140	34.3%	14.3%	51.4%	7.8%
9. 2:30	137	29.2%	10.2%	60.6%	-
10. 3:00-4:00	170	34.1%	21.8%	44.1%	-
	1562				

The low show rates and late arrivals increase the amount of staff waiting time. The staff, each day, recorded the amount of time in setting up the clinic, in non-screening tasks, in client service and waiting for clients. These times are summarized as follows: (n=93)

Time Spent by Screening Clinic Staff

Item	Mean (Total Staff Minutes)	95% Confidence Interval	Mean Time Per Client	Comments
Non-Screen (Administrative Duties)	76.18	±22.52	5.70	Only 7.5% of clinics had more than 20 minutes per client of non-screening tasks; 50% of clinics had less than 60 minutes total.
Set-up time to get clinic ready	109.90	±13.13	7.41	87% of clinics took less than 15 minutes per client to set up; only 4% of the clinics had more than 206 minutes total set up time.
Client Service time	636	±57.11	38.40	87% of clinics had an average service time per client between 23 and 50 minutes.
Staff waiting time	994.5	±75.00	58.50	87% of the clinics had a staff wait time per client of less than 98 minutes.
Client waiting time	589	±45.00	34.10	Normally distributed with 80% of the clinics showing an average client waiting time between 20 and 50 minutes Only 16% had an average over 16 minutes.

The staff times reported above involve several different persons. The typical clinic involved in the queuing study clinic analysis had the following staff:

Staff Type	Mean Number Per Clinic	95% Conf. Interval	Distribution of Number of Staff Members Percentage in Each Number Group Number of Staff Members 0	1	2	3	4
Clerk	.71	± .009	29%	71%	0	0	0
Aides	1.27	± .012	4%	67%	28%	1%	0
Physician	.98	± .004	2%	97%	1%	0	0
Nurse Exam.	1.34	± .014	5%	59%	31%	4%	0
Reg. Nurse	1.01	± .016	24%	54%	22%	1%	0
Pub. Health Nurse	.312	± .012	73%	23%	4%	0	0

The clerk handles records, makes appointments, and on occasion, does height, weight, vision, hearing, and urinalysis.

The aides make sure the patients are flowing to the appropriate screening stations and routinely perform the height, weight, vision, hearing and urinalysis. They, at times, can substitute for a clerk, but are less proficient in record keeping.

The Registered Nurse and clinic Public Health Nurse conduct similar functions as the aides. The clinic tried to have an aide assigned to assist one of the nurses where help is needed.

The M.D. or the nurse examiner conduct the examination. When the nurse is unsure about a referral, the M.D. is consulted. There is generally one M.D. in the clinic and additional nurse examiners when the volume supported the need for additional examiners. This offers the flexibility of having the M.D. able to make referrals without further consultation and meets the state requirement that an M.D. should be present at each clinic. More will be discussed about this when the dual screen study is presented in Chapter 4.

Since the staff waiting time was so high in the average clinic, a correlation and regression analysis were performed to determine the factors associated with the staff waiting time. These regressions are shown in Appendix F .

With staff waiting time per client as the dependent variable, the most important variables related are:

1. The kept appointment rate: the higher the show rate (out of scheduled appointments) the lower the staff waiting time, other things equal.

2. The number of R.N.'s per scheduled patient: The more the R.N.'s per clinic, the higher the staff waiting time, other things equal.

3. The number of public health nurses per clinic was correlated highly to the number of patients showing, and the more patients, the more public health nurses, and the less the staff waiting time per scheduled patient. This indicates that the Public Health Nurses were used as a flexible back up support for those days when the clinic load was particularly high. These nurses could be doing their home visiting when clinic volumes were low, but the rest of the staff appears to be rather fixed,

once the constraints of the physical facility are given. There is some evidence of overstaffing in the R.N. area. This was originally thought to come about because of a higher ratio of R.N.'s to other staff at the smaller infant screen clinics, but when those clinics were removed, the positive relationship between the number of R.N.'s per scheduled client and the amount of staff waiting time per client still remained, indicating excess R.N. coverage in relation to the availability of public health nurses.

The use of a "Paper Clinic" concept in which the mother came to the clinic to complete all the paper work was felt by the staff to be a possible way to reduce the no-shows and decrease staff waiting. However this approach has not been empirically evaluated to determine which clients don't show because of the need for two separate visits.

Additional data on clinic staffing came from the queueing study individual client visit sheets. The distribution of personnel available when each child arrived is shown below for the two clinics that were the original EPSDT clinics in the first three years of the project. For 170 children in the Richmond Clinic, and 221 in the Brentwood Clinic, the following were the number of staff members present when the child showed for screening.

	Richmond Clinic Number Available			Brentwood Clinic Number Available		
Staff Type	0	1	2	0	1	2
Clerk	0	100%	0	0	100%	0
Aides	16%	31%	53%	0.9%	68.8%	30.3%
M.D.		100%		6.3%	93.7%	
Nurse Examiner		66.5%	33.5%	12.2%	87.8%	0
Registered Nurse	11.2%	77.6%	11.2%	0.9%	99.1%	0
Public Health Nurse	81.8%	2.4%	15.9%	87.8%	11.8%	.5%

The data system for project year 1976 showed that for these clinics, 82.8% of the physicals in Richmond (but only 40% in Concord, and 55% in Brentwood) were done by nurse examiners. This may indicate that the queueing study somewhat under repre-

sented those clinics or clinic sites that had a larger proportion of the total effort conducted by nurse examiners.

The individual queueing sheet data set was used to study the times involved by clients. Table 2.2 shows that the total time in the clinic for the average child needing an original screen varied from 80 minutes for children under age 1 to 98 minutes for children age 12-21. Approximately half of this total time was spent waiting and the other half in direct contact with a member of the screening team. The table also shows that periodic screens took about 10 minutes less, and the adds and rechecks took between 40 minutes and an hour in total. Many factors could affect this service time, the waiting time and the total time. A stepwise regression analysis was used to show the independent effect of specified variables that were available on the individual queueing information sheet. The regression equations are shown in Appendix G for each major part of the child's screen. There is also an explanation of the parts of the regression information that is presented there. The results are discussed on the following page.

TABLE 2.2
Part A

Average Total Service Plus Waiting Time (in Minutes) for Types of Clinic Visit and Age Grouping

Key = Average (Standard Deviation) [Sample Size]

Age Group \ Screen Type	Original		Periodic	Add	Recheck
Under 1	80 (29) [173]	Minutes	76 (24) [262]	56 (25) [44]	51 (31) [13]
1 - 4	96 (29) [152]		76 (29) [489]	51 (27) [125]	48 (26) [28]
5 - 11	96 (28) [74]		82 (33) [44]	59 (41) [28]	41 (31) [9]
12 - 21	98 (29) [58]		82 (22) [14]	59 (33) [7]	21 (1.4) [2]

TABLE 2.2
Part B

Average Total Service Time for Types of Clinic Visits and Age Groups

Times Are Shown in Minutes
(Only means are shown for comparative purposes)

	Original		Periodic	Add	Recheck	
Under 1	42	Minutes	39	24	24	
1 Year	52		36	23	24	
2 Years	44		38	23	24	
3 Years	44		38	23	20	
4 Years	48		44	27	25	
5 Years	53		45	25	46	(Small Sample Size)
6 - 11 Years	51		46	18	21	
12 - 20 Years	55		52	18	16	

The results shown in Appendix G indicate that insufficient factors were present to allow prediction of the waiting or service times for any single individual, but that certain factors definitely increased or decreased the probability of waiting.* In general, the results show the following:

All other factors held constant, the average service time was:

3.0 minutes less on Wednesdays
0.5 minutes greater for each month's increase in age **
4.4 minutes more if the person arrived at 8:00 a.m.
9.0 minutes less if the screen was not an original screen
4.6 minutes more in West and Central County

All other factors held constant, the average waiting time was:

10.6 minutes less when the appointment was scheduled (versus walk-ins)
0.8 minutes less for every month's increase in age
3.2 minutes less when the screen was not an original screen
20.8 minutes less in clinics 111 and 302 (satellite clinics in churches)

4.4 minutes less on Fridays and Mondays
4.3 minutes less in East and Central County
13.0 minutes more for each additional child in the family brought to be screened on the same day
0.3 minutes more for each minute's difference between time of arrival and appointment time (i.e., early arrivals had to wait slightly longer)

Detailed tables of the specific averages involved in waiting and service times for the aforementioned variables, without holding their factors constant, are shown in Appendix H. The patterns revealed in this analysis, as listed above, indicate what when the clinics are busy, waiting time is increased and service time is decreased. A mother wanting to minimize waiting time and maximize service time should schedule her appointments (as opposed to "dropping in"), particularly

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*The R^2 was low at .184, but the F for entry was quite high for most variables, indicating a group effect, but not applicable to any single individual.

**i.e., starting at an average age of 60 months; if the child is younger, service time would be less, if the child is older, service time would be greater.

for either a Monday or Friday, arrive on time, and bring all of her eligible children that she can manage (the clinic suggested only two at a time).

Nearly half of the service time was composed of the physical exam, including consultation and referral when necessary. The total physical exam took about 22-29 minutes (varying by age group), on the average ($\pm$ 2 minutes for a 95% confidence interval) for an original or periodic screen, and approximately 15 minutes for an add or recheck. Originally, 40 minutes per child was allocated for the nurse examiners when scheduling children. This appears to be fairly accurate, because the 22-29 minutes for the original and periodic screens represent only direct service time. There was still time needed for non-screening tasks clinic set-up, and waiting for clients.

The distribution of the total exam time in the 2 clinics originally part of the EPSDT project (Richmond and Brentwood), is presented in Table 2.3. Also shown is the distribution of time waited until registration, registration time, and the time between registration and the first procedure. From this table it can be computed that two thirds of children waited less than 5 minutes prior to registration and two thirds waited less than 6 minutes prior to the first step. Health education efforts such as videotapes, etc., in the waiting room would have to be very short and repeated often in order to get full coverage. For the one third that waited longer than 6 minutes, different messages could be presented, but for these, printed materials on the same subjects may be useful.

Table 2.3

Distribution of the Minutes Spent by Queuing Study Children upon Arrival at Clinic

Time in Minutes	Number of Children in Study taking the Amount of Time Shown at the Left			
	Total Exam Time*	Waiting Time Registration	Registration	Waiting Time Until 1st Procedure
0	0	141	0	28
1	0	15	4	55
2	0	36	58	63
3	1	11	62	48
4	1	6	48	7
5	12	50	114	26
6-9	4	22	43	34
10	16	23	27	17
11-14	25	18	8	9
15	57	22	9	5
16-19	23	9	21	5
20	76	6	0	3
21-25	64	8	3	8
26-30	38	6	0	1
31-35	15	2	3	4
36-40	4	2		0
41-60	10	5		3
	346	382	397	316
Median time in minutes	18	2	4.5	2.5

*Note: only in 22 cases(6% of the cases) was the physical, consultant, and referral time recorded separately. When it was recorded separately, it took approximately 7 minutes for the physical, 10 for the consultation, and 10 for the referral.

The service times for each of the other individual screening procedure are given in Table 2.4. Only those times for the 2 largest clinics that were originally part of the EPSDT project (Richmond, Brentwood) are shown. When given, each of the screen procedures required a medial time of 3.5 to 4.5 minutes. The total time of service given to a particular child, then would depend upon the number of different procedures that were included in the screening visit. A child requiring all components of the screen would, at the median, require the following times of service:

Procedure	Time (in minutes)
Wait to register	2.0
Register	4.5
Wait until first step	2.5
Height,Weight, Urine	4.5
Vision	3.5
Hearing	3.5
Lab	4.5
Physical Exam	18.0
Immunization	4.5
Total Service Time	47.5 Minutes

The rest of the time, the child would be waiting for service or waiting for the siblings to finish their screen.

Lessons from the Queueing Data

There are two major lessons from the data presented about staffing, show rates, and service times. One has to do with reimbursement, and the other about optimum staffing.

The typical fee schedule for EPSDT provides for individual service reimbursement (i.e. so much for the physical, another amount for vision, for hearing, for immunization, etc.) Under this type of fee schedule even if the total fee available

TABLE 2.4

Distribution of the Minutes Spent by Queuing Studying Children in Individual Screen Procedure

Time in Minutes	Number of Children Requiring the Time Indicated on the Left				
	Height, Weight, Urine	Vision (Only for children according to periodicity Schedule Average)	Hearing who needed	Immunization check status Update Shots	Lab Drawing Blood
0	0	0	0	0	0
1	11	1	1	21	8
2	53	9	8	32	18
3	54	5	11	30	22
4	44	15	4	26	28
5	95	3	21	72	56
6	9	2	0	9	7
7	9	2	2	7	13
8	8	6	2	6	7
9	1	0	2	1	4
10	15	0	1	17	13
11	2	0	0	2	3
12	1	0	0	4	12
13	1	0	0	2	3
14	1	0	0	0	0
15	0	2	2	5	1
15	1	2	0	2	1
Total	305	47	54	236	196
Median time in Minutes when the process was rendered	4.5	3.5	3.5	4	4.5

to the vendor on a complete screen is reasonable and state policy permits second recheck testing, the vendor cannot economically afford to recheck a screening test as the fee schedule assumes it is a test given within a series of test, and there is no financial recognition that the process of retesting involves nearly as much administrative work as the process of conducting a second screen. In each, an appointment must be made, a medical record pulled, a service report prepared, the client introduced to the clinic flow, the service recorded, the client exit-interviewed, the medical record returned to the office and refiled, a bill prepared. Table 2.2B indicates that a recheck typically is slightly more than half the time that is involved in a rescreen. Yet, in the Contra Costa experience the rescreen is reimbursed at the rate of around $35, and the recheck at from $3-$7. What is needed is an "office visit" fee in addition to the specific test reimbursement.

The alternative is that it is to the economic interest of the screening vendor to refer the child with a dubious test result for treatment. This course of events leads to two other consequences -- unnecessary medical referrals and their concommitant costs to Medicaid, plus causing the care provider who receives excessive false positive referrals from screenors to properly seriously question the quality of health services provided by EPSDT clinics.

In the private physician's office, the same testing problem undoubtly exists. Though no investigation has been made, it is reasonable to assume that in at least some cases the ambigious test results in a reappointment as an office visit and billing for an office visit and testing outside the EPSDT context. In short, typical EPSDT reimbursement procedures do not encourage screenors to enhance the quality of their medical referrals at the hidden cost to the Medicaid program.

The second lesson from the queueing study concerns staffing.

Minimizing staff costs is difficult due to the variability in the no-show rate, and the limitation on the size of the clinic facility. In our experience, we have seen state office personnel in some states multiply the estimated service times by the hourly staff rate to get the fee that would be paid. However, the staff waiting time is at least as much as the service time, so that additional funds must be made available to a program to account for the high no show rate. The data in this study showed that the staff waiting time could be reduced by reducing the number of R.N's employed in relation to the on-call public health nurses, and by appointing persons only starting at 9:30 and 2:00 in order to reduce the no show rate and late arrivals, but some full salary staff must be available.

In an idealized setting, it would be preferrable to have a large clinic with at least 4 or 5 exam rooms, 3 nurse examiners, one M.D., and the supportive clerical aides, and nursing personnel. Don Meyer, the data and projects coordinator, prepared Table 2.5 to illustrate the necessity for a clinic to carefully analyze its staffing pattern in order to obtain efficiency.

The numbers are for illustration purposes only and do not necessarily reflect true costs (only direct costs are shown and minimum idle time is assumed). The table shows that as more examiners are added to the clinic staff, the volume of screening can be increased; but additional personnel will have to be added at different stations to compliment these new examiners. The conclusion is that a total of four examiners (1 M.D. and 3 P.N.P.'s) provides the staffing ratio per clinic which will allow the Health Department to best recover its costs. In addition to the four examiners, additional personnel required are: (1) one clerk, to handle the filing of records and to check the screening sheet and chart for completeness prior to the client's departure: (2) one aide, to conduct vital sign

TABLE 2.5

Examiner Staffing Pattern to Indicate
Maximum Relative Cost of Labor Per Hour to Revenue

Numbers of Examiners per Clinic	1	2	3	4	5
Examiners/Hourly Rate					
M.D. $ 20	$ 20	$ 20	$ 20	$ 20	$ 20
PNP $ 10	-0-	$ 10	$ 20	$ 30	$ 40
Associate Clinic Personnel					
Clerical $ 5	$ 5	$ 5	$ 5	$ 5	$ 10
Aide $ 5	-0-	-0-	$ 5	$ 5	$ 10
Lab $ 5	$ 10	$ 10	$ 10	$ 10	$ 20
Total Clinic Hourly Personnel Cost	$ 35	$ 45	$ 60	$ 70	$100
Screens per hour at 40 minutes per screen per examiner	1.5	3	4.5	6	7.5
Revenue at $ 30 per screen	$ 45	$ 90	$135	$180	$225
Revenue/Labor Cost Ratio	1.28	2.0	2.25	2.57	2.25

These figures are presented as rough approximations for the purpose of illustrating relationships not actual cost or revenue.

measurements and to take patient histories; and (3) two lab technicians or R.N.'s to draw blood and conduct urinalyses, vision and hearing tests. In this project the various screening stations (vision, hearing, lab, patient history) were not set up in a series for the children. Rather, with the exception of the physical examination and immunization, the child was started in a station which was not busy and was circulated through the other stations with the shortest waiting lines. While this procedure effectively avoided excessive bottlenecking, it required additional staff attention to ensure that each child was processed through each station. It was found to be helpful to have a roving nurse capable of performing at each of the various stations where bottlenecks might occur.

In Table 2.5 the revenue/labor cost ratio is 2.57 in the most efficient case. This does not mean that the clinic would be making a profit, but that they would be most likely to cover their fixed costs at this staffing pattern. Only the clinic in Concord, 8th Street in Richmond, and the Brentwood Clinic had sufficient capacity to allow the idealized staffing. The other clinic locations (in churches and community centers) were limited to one or two exam rooms in which case the idealized "personnel efficient staffing" could never occur.

In summary, reimbursement levels need to be determined with cognizance of the problems involved in covering costs under the relatively low fees generally offered under the Medicaid program.

CHAPTER 3

OUTREACH

All activities performed in order to get children to the screening clinics are classified as "outreach" in terms of this report. Prior to the implementation of EPSDT nationally, many clinic directors around the country were concerned about how they would manage to serve all the children who would show up for "free" care when the clinics opened. They were quite surprised to learn that simply opening a clinic and announcing its availability had little impact as far as bringing the clients in. Social Service programs have become accustomed to setting up mechanisms to keep persons away from their programs rather than trying to bring them into the programs (cash grants, welfare, food stamps). Health persons have an anti-advertising ethic (at least in an overt way) woven into their operational fabric, and Medicaid agencies were previously only interested in paying claims for services rendered by the medical profession.

Just as for the successful marketing of any new product or service whose quality is as yet unknown, these clinics require a successful marketing mix to inform, encourage, and convince potential clients of their particular need for this service, and of its ready availability to them. They have to be persuaded to initiate a time-consuming process for the benefit of their children, whom they may consider healthy to begin with, or, if not, may fear such a contact with the health care system will cost them much time and money before its successful conclusion. Essential to the successful marketing of the services provided by these clinics are a convenient clinic location and a staff that is warm, friendly, concerned, and professional, both in terms of performance and in explaining what is being

done and why. A Client Attitude Study[1] conducted toward the end of the third project year found that persons showing for the service were quite satisfied with the care which they received. Although the major clinics were not elaborate, they had been renovated and painted in pleasant colors. Given an acceptable clinic, the County used two major approaches to reaching the clients--individual and organizational. The individual approach, which was highly successful, is described below. The organizational approach will be discussed later in this chapter.

Six Community Health Workers (CHW's) were assigned to Richmond and three to Brentwood. The aides, which had previously been employed by the Health Care Outreach Project, reflected the ethnic mixes of the communities which they served. They were members of these communities and had been trained to help clients utilize the existing system of health and social services. In addition to their training and experience as community workers, the Health Department provided an initial 114-hour training series conducted by a nursing service, including classroom instruction and on-the-job experience, covering the following topics:

Topic	Total Hours
Rapport - General Orientation	8
Philosophy and Objectives	8
Temperature, Pulse, Respiration	4
Blood Pressure	8
Immunization Screening	4
Weight & Measurement (head circumference)	2
Collection of Urine (performing test, PKU, sugar, protein)	4
Hearing Screening	4
Vision Screening	4
Health History (interview technique)	4
Preparation of Patient for Physical Exam, Blood Test, etc.	4
Developmental Screening	28
Data Collection & Recordkeeping	4
Other, Including Review	40
On-Going Clinic Practice and Health Outreach Activities	28
TOTAL	114

[1]Discussed in Chapter 7.

And, in addition, the CHW's received training on the"Psycho-Social Aspects of Growth, Development and Common Mental Health Problems in the Community" from Dr. Pete LaReviera and Dr. Finis Drew, Ph.D., Director, Child Diagnostic and Evaluation Center, County Medical Services, Richmond. All CHW's attended a seminar on "Patients with Psychiatric and Behavioral Problems", conducted by the Mt. Diablo Therapy Center, for which they received certificates (total of 10.5 hours). Two CHW's received special training on "Audiometric Screening for Pre-school Child" from Mr. D. R. Caviarc, Healing Conservation Specialist, State Department of Health (total of 10 hours).

The specific tasks of the Community Health Workers included:

1. Making outreach contact by door-to-door visiting in the project target areas.
2. Making home visits to complete clinic forms.
3. Making telephone calls from the clinic to remind clients of appointments, sometimes going to clients' homes, dressing the children, and providing transportation to the clinic.
4. Working in the clinics, so that clients see a familiar face while being screened.
    a. Conducting intake interviews.
    b. Taking height and weight measurements.
    c. Conducting exit interviews (health education).
    d. Making referrals for problems identified during screening.
5. Assisting clients in keeping referral appointments by:
    a. Calling and reminding clients of appointments.
    b. When necessary, going to clients' homes, dressing the children, and providing transportation.

6. Maintaining a periodicity schedule for each client, recalling them when each screen became due. Fourteen screens were available to the client during the years from 0-21.
7. Locating clients who moved within the census tracts, which was a frequent occurrence, and recruiting new clients moving into the area. These two activities consumed between 5 and 10 hours of a CHW's time for each family to be screened.

The CHW's also took it upon themselves to work with individuals in unique circumstances and to work with special groups. For instance, one CHW found that Spanish-speaking mothers had problems buying groceries at discount stores due to the language barrier and a lack of knowledge regarding store procedures; so she accompanied the mothers to the store and taught them how to shop. Another CHW worked with women in prison, many of whom had children (generally in foster homes) who were involved in the screening process. In addition, the CHW's worked with small groups, such as PTA's, Boys Clubs, groups of mothers from particular neighborhoods, etc., to generate interest in the program.

The CHW's had many valuable assets and strengths which need to be recognized. Since they were members of the communities in which they worked, they already knew many of the clients personally and had much in common with them. As a result, their being officed at the major clinics added a legitimacy to the clinics which they would not have otherwise had. They were able to interpret services to the clients in common terms of their own dialect, avoiding the use of health jargon whenever possible. They helped to effect continuity of care because due to their personal interest, and they often served as client advocates. They also realized that in order to secure the mothers' active participation in preventive health measures for their children it was often necessary to

perform various other social services, such as helping them to secure better housing, food stamps, etc.

On the negative side, there were a few minor problems or weaknesses regarding the CHW's which also should be pointed out. While they were very adept at communicating with their peers, they had difficulty communicating within the organizational structure of the project (i.e., filling out forms, recording problems, etc.). The project staff eventually turned the responsibility for most written work over to the clerks, thus minimizing the necessity for written statements by the CHW's. While, as stated before, the CHW's realized that in order to secure client participation in preventive health, other social services often needed to be performed; at times they tended to be easily sidetracked into spending a great deal of time on one or two interesting or needy cases, while the clinic went unfilled. The technique of quotas was tried from time to time, but the CHW's often appointed friends or relatives to fill their quotas rather than making the necessary new contacts. In order to effectively utilize the CHW's, an ordering of priorities for the competing demands on their time is needed, as well as strict supervision of their workloads. Rather than have all of the CHW's reporting to the same supervisor, it might be better to attach several of them to Public Health Nurses trained in the utilization and supervision of aides. Finally, some of the CHW's were frequently ill, thus necessitating overstaffing by approximately one person in order to assure an even flow of outreach activity.

Despite these problems, the County has continued to use similar aides in the conduct of outreach for its Child Health and Disability Prevention Program (which includes EPSDT for Medi-Cal children), under the 25-75% state/federal match rate available for outreach activities. A major reason for this is found in the results of the outreach experiments, a description of which follows.

Outreach Experiments

A series of three experiments (two of which had two phases) were conducted to determine the penetration rate (percentage of Medi-Cal eligible children) which could be achieved under alternate outreach techniques. The first was conducted in the lower income areas of Richmond, the second in Central County, and the third again in Richmond. Detailed accounts of these experiments are included in Appendix I and Appendix J. This chapter, however, presents a summarization of the general approach used in the experiments, the major findings, and an account of some lessons resulting from them.

Two qualifications must be stated--one concerning the methods of the CHW's and one concerning transportation. In the overall project, the community aides conducted door-to-door canvassing for both Medi-Cal and non-Medi-Cal children within assigned geographical boundaries. But in these outreach studies when the CHW's were utilized, they worked from lists of AFDC mothers. This proved much less effective because they spent much of their time trying to straighten out incorrect addresses, find the family at home, etc. Since the national EPSDT program was only for Medi-Cal children, the studies were limited to the Medi-Cal children. This may understate the true effectiveness of the CHW's, but unless the national program is altered to cover all low income persons, this will remain a constraint of program operation. In addition, Medi-Cal would pay for screens conducted in either the health department, or a private physician's office. The health department policy was to seek primarily those children without a regular source of medical care. The rates of show for screen may have been higher than reflected in the tables that follow if the family was stimulated to get a screen from the private physician--in which case, our data system would not have documented a screen that actually may have occurred.

Clients were asked if they needed transportation. If it was needed, the project provided it--either with county cars, the CHW's cars (paid mileage), or through private or public personal transportation services. In the rural Brentwood area, most clients already had worked out their own transportation system and very little was requested. In Richmond, however, the demand for transportation was greater. Therefore transportation, although not provided to each person, was readily available.

Table 3.1 provides a summary of the results of the experiments to be described. Each experiment will be discussed along with its resulting findings. The first study, the cumulative wave approach, was conducted to determine the number of families from the target area in Richmond that could be screened from a list of 600 AFDC[2] (and, therefore, Medi-Cal) eligible mothers, who, to the best knowledge of the project, had not been screened at the time. The families were approached with increasingly intensive outreach techniques starting with letters and finishing with intensive home visiting. As discussed in the detailed report in Appendix I, not all families were actually contacted each time, but the list of names was used as the starting base for each round (unless it was found in the preceding round that the family had already been screened by the clinic or by their own physician, that they had moved subsequently, or that they definitely did not want any more contacts by the clinic).[3] The experiment extended over an eight month period because the CHW's had other tasks to perform and a period of time was allowed between each wave of effort.

The results of the wave approach of outreach of increasingly intense efforts applied to a specific population are indicated by the cumulative successfulness in getting families to respond to the first appointment, as well as the number of families eventually screened. The true rate probably lies somewhere between

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[2]Aid to Families with Dependent Children

[3]Approximately 10% indicated that they already had their own physician whom they wanted to perform the screen. By the time the visiting started, nearly 6% had moved; and by the end of the study, 20% of the original count had moved.

TABLE 3.1

Summary of Alternative Rates of AFDC List Penetration Rates Listed in Time Order of Performance for Shows for Screening

	MEASURES OF PENETRATION RATE	
	Eventually Show (after 6 months)	Show on First Appointment
Richmond		
I. Cumulative Wave Approach--Cumulative Percentage of 600 families showing for Screening:		
- Newspaper Article	0%	1.0%
+ Letter with no date Specified	1.5%	1.0%
+ Telephone Call	4.5%	3.8
+ Brief Home Visit CHW	7.6%	4.8
+ Longer Home Visit CHW[1] (including absent health history)	13.3%	9.0
+ "Anything Goes" CHW	19.3 to 24%[2]	
II. Pure Approach - Only one Technique (N = 70 per group Except for "Anything Goes" having 57)--Percentage of the 70 Families in each group that showed for screening:		
- Letters, No Date Specified (3 letters)	7.7%	5.7%
- Phone Call only	15.7%	0
- Brief Home Visit only	5.7%	3.0
- Home Visit with History and Education	14.2%	3.0
- Homes Visit with Health History only	8.6%	7.0
- Anything Goes only	29.8%	28.9
III. Central County (100 per Group):	Project Percent of the 100 families in each group assuming the best techniques used.	
- Letter from Eligibility Worker, No Date, No Reminder	4%	4%
- Letter from Eligibility Worker, No Date, Reminder	4	4
- Latter from Eligibility Worker, Date Given, No Reminder	19%[3]	10
- Letter from Eligibility Worker, Date Given, Reminder	30	21
- Home Visit from Eligibility Worker, Reminder	44	25
- Home Visit from Eligibility Worker, No Reminder	25	9
- Home Visit from Home Health Aide, Reminder	23	20
- Home Visit from Home Health Aide, No Reminder	23	20
IV. Richmond Supplementary (75 per Group)		
- Letter, No Date, Reminder	-[4]	5%
- Letter with Date, No Reminder	-	1
- Letter with Date, Reminder	-	15
- Letter with No Date, No Reminder	-	5

[1]Community Health Worker.

[2]Since 20 percent lost eligibility over the extended time of the study, perhaps should compute the 115 families showing as a percent of (600 x .8) = 480.

[3]On all numbers shown in this column except the last two, the broken first appointment was followed by a phone call or note and a reminder. The last two assume a return visit.

[4]Time ran out for well controlled study due to start of other county programs.

these two numbers because persons were screened between the time of missing their first appointment and the beginning of the next method of outreach. An attempt was made to employ no other methods of outreach so as to isolate more accurately the effects of each, but persons showing between waves of outreach activity may have learned about the program from a different source. Of the 600 families in the experiment, a cumulative percentage of 19.3 were reached. Taking into consideration the fact that so much time elapsed from the first wave of outreach to the conclusion of the experiments, perhaps the maximum of the 600 families which could have possibly been reached was 80%, or 480. If this were the case and the 480 were used as the base for the "anything goes" cumulative rate, then the resulting penetration rate could be as high as 24%. The "anything goes" method allowed the CHW's to employ any technique which they determined to be the most effective for any particular client. According to the CHW's, this usually required at least one "in-home" visit (usually in the early evening), and often an additional visit to the home on the day of appointment to assist the mother in getting the children ready and to transport them to the clinic, when necessary.

Somewhat better results were obtained with the "pure" approach, in which only one technique was employed on a set of families chosen from an area of Richmond similar to that for which the wave approach had been used. The community in general, however, was slightly more familiar with the clinic by the time this experiment began. The pure approach was commenced prior to the conclusion of the wave approach, although the census tracts from which the names were chosen were similar in demographic characterisitcs and had not been previously outreached by the CHW's at the time of the study. Random assignment of families not previously screened was made to five separate groups. The number of families screened within a six-month initial contact period (according to screening sheets submitted to the HSRI data system), as well as the percentage of each group showing for first appointment, are

shown in Table 3.1. As mentioned earlier, since clients showing may have heard about the program from a different source other than the particular method, the true percentage probably lies between the two figures. The pattern of participation is similar to that found in the cumulative study, with the "anything goes" method being the only one with more than 20 percent (particularly on the first appointment). Persons outreached by letters and telephone calls showed an eventual participation rate of 13-19%. It is not known whether families missing the first appointment merely had trouble keeping that particular appointment or whether they subsequently received additional outreach.

Central County, without access to CHW's such as were employed in Richmond, developed a slightly different set of outreach techniques. These included: (1) a letter from the AFDC eligibility worker inviting the client to call for an appointment, without suggesting any specific appointment date; (2) a letter from the AFDC eligibility worker requesting the client to come for an appointment on a specific date; (3) an "in-home" visit by an eligibility worker (not necessarily the client's own worker); and (4) an "in-home"visit by a home health aide. In the initial round, half of the mothers were chosen randomly to receive reminders of their appointments a few days prior to the appointment date. The results of these efforts, including reminders, are shown in Table 3.1. The rate of show for any major technique subset (i.e., reminder for letter with specific date) was projected as if that subset (reminder versus no reminder) had been applied to the entire major technique (letter with a date). Although the home visit from an eligibility worker with a follow-up reminder had the highest rate of show at 25%, the letter from the eligibility worker with a date specified and a reminder did nearly as well with a 21% show rate. Persons not showing during the first round were randomly assigned to have one of the initial techniques repeated either immediately or six months later. The eligibility worker total rate was increased to 44% by either telephoning or sending written

notices to broken appointments, and the appointment date letter total percent showing was increased to 30% by telephoning or sending a written notice to reschedule a new appointment for those persons breaking first appointments.

The surprisingly good results of the letter with appointment date specified led to its being employed in Richmond as well in a supplementary study. The limited amount of time available for this supplementary study restricted the monitoring of its results to the first appointment only. A second round of contacting the broken appointments would have been biased in this instance, because the State CHDP had been running local media advertisements and working closely with the schools to get school enterers screened. The first appointment results, however, were similar to those in Central County, indicating that if a letter is to be used, it will have considerably more impact if a specific date to be screened is included. The use of such a letter apparently helps to sort out persons who would otherwise say that they already have a doctor, who are not interested in participating in the program in any event, or who ordinarily would promise the worker to show for an appointment without any intention of actually doing so. The personal contact approach is the most effective once the person is contacted and makes an appointment. Project staff indicated that persons initially outreached in person tend to have a much higher rate of continued program participation than do those contacted via other means. Locating the clients is the most time-consuming problem involved in personal visiting. Perhaps letters should be further researched as a source of outreach when a 15-25% participation rate is desired and the program has already been in operation for a while.

Additional facts learned in the conduct of the outreach studies are as follows:

. Telephones are moderately effective in reminder contacting, but only one-third of the families in the Richmond target area had telephones.

- In the first wave of the cumulative study, the eventual show rate reflected no discernible difference between the effect of those letters signed by the Health Department and those signed by the Social Services Department, and neither was very effective.
- Home visiting without intensive involvement with the client, (intensive involvement = health history and education, offering transportation) is of little value.
- Community Health Workers had to expend approximately five hours of their time on each individual family expected to show for a screen.
- Reminders just prior to the day of screening appeared very effective, especially in connection with the less intensive outreach methods.
- Repeat of the same method of outreach following a broken appointment is not effective. A switch should be made to a different method.

Conclusions Regarding Individual Outreach Techniques

It can be concluded from the foregoing discussion that a mix of outreach techniques is necessary to generate demand for the child screening services. Alternative techniques should be tried in each separate locality. It was found in Contra Costa County that personal outreach was the most effective, but that letters specifying a date of appointment were also highly effective and less costly once the project had been in existence for a year because persons who already have sources of ongoing care, or who never intend to show, will not respond to the letter.

Organizational Outreach in the Project Target Areas

Given the low rates of show, it appears that CHW's must divide their time between conducting individualized outreach and working through existing organizational entities where children are located (such as the school systems or day care centers) or those which traditionally serve the family (such as the Social Services Department or Public Health Nurses).

When multiple agencies are involved, even very simple, essential communications become complex. For example, when the Department of Social Services was to refer clients to the screening clinic, the client's permission had to be obtained for release of information between the two agencies and the Social Service Workers had to be trained to complete referral documents properly and briefed as to what the children would experience during the screening process. In order to properly coordinate these activities, the Social Services Department needed a nearly full-time person to attend meetings regarding EPSDT within their own agency, at the Health Department, and throughout the state of California. Appendix L, contains a sample memorandum sent by this person. Ensuring that everyone on the staff understands the implications of this memorandum would require considerable effort. The memo has somewhat of a self-responsibility tone to it, such as "If client wishes more information", or "If a client subsequently wishes a referral to a public provider, they should call the worker back". However, the actual intent was to encourage in a most direct and friendly way that the children be screened.

Organizational outreach conducted through the schools had several stumbling blocks. First, the school health programs were facing severe cutbacks in personnel, and, therefore, health services were not a priority. The private medical sector physicians were opposed to administering health services in the school setting.

The school nurse was instructed to encourage the parents to utilize their "usual source of care", unless, of course, they didn't have one. The confidentiality of records presented an additional problem. Physicians were reluctant to release information to the schools unless a school nurse was available to interpret it.

Despite the aforementioned difficulties with screening in schools, several schools participated in a demonstration of screening in schools: Antioch and Pittsburg in East County, Cambridge and Meadow Homes in Central County, and Stege in Richmond. In addition, a screening program was developed with the Richmond Boys' Club, in which an entire health education program was developed by the project nurses and CHW's and a screening day was held.

Planning of the school screening required considerable time because of the various officials involved. However, once the school secretaries and nurses were trained in what was to be done, the entire package could be repeated each subsequent year with very little planning time required. For example, in preparing for screening in the Freemont Elementary School, the following persons were involved in three 1 1/2 hour meetings:

Jim Pierce - Coordinator, Antioch School District
Jeri Smith - Guidance Specialist, Antioch School District
Dr. Khanna - Health Department, Chief of Community Health Services
Joan Fenske- CHDP Consultant
Jim Henderson - Health Educator
Vera Reynolds - Public Health Nurse Supervisor
Leslie French - Senior Public Health Nurse

Many problems of confidentiality, parental permission, etc., had to be worked out. Figure 3.2 shows the general format and results of each school's approach. A review of Figure 3.2 shows that the recruitment techniques most often included: school officials gathering lists of children needing screening; sending a letter prepared by the Health Department home with children to secure parental consent; conducting an informational meeting for interested parents; and visits by CHW's or

Figure 3.1

School Screening in Contra Costa County
(Focused on children not yet receiving physical)

Aspects	Freemont Elementary - Antioch	Marina Elementary -Pittsburg	School: Cambridge Elementary	School: Meadow Homes	School: Stege School
Approach to getting children	Parents informed by PHN home visits	Letter to parents (70) Invited to school for info meeting Of 70 persons, 40 listed the Prepaid Health Plan as a source of care, but only 3 had previous screen	Children took consult forms to parents Health Department contacted those returning the consent form	Same as Cambridge	Sent letters to parents Invited to meeting for program explanation or visited by community Health Worker. Out of 504 children in the entire school, 100 were interested in Health Department Screen
Clinic Timing	1st week - lab work 2nd week - physical	One time only but school nurse tried to do vision, hearing and developmental prior to screen day	Pre-clinic measurement, blood drawn, urinalysis School nurse did vision and hearing prior to screen day	Same as Cambridge plus school nurse showed a film on the screening procedures, prior to screening	Pre-Screen urine, height, weight, hearing, vision Physical Exam There were 3 separate clinics (each having a pre clinic): May 4 (25 screened) May 11 (48 screened) May 25 (34 screened)
Staffing	Home visits and planning PHN-7.5 hours School nurse-40 hours Planning and coordination 2 persons @ 2 hours paperwork-6 hours Clinic @ 4 hours each PHN supervisor PNP Home Health Aide M.D. Parent volunteer	Recruitment at 30 minutes per child 2 Home Health Aides 1 PHN 3 Spanish speaking school aides Clinic 1 M.D. 2 PNP 1 RN 2 Aides	Recruitment Aides-13 hrs. PHN-12 Clerk-9 Clinic Clerk-16 R.N.-7 PHN-8 N.X.-13 M.D.-8 Nutrit.-7 Dental-9 PHN Super.-12	Recruitment Aides-15 hrs. PHN-12 Clerk-10 Clinic-follow-up Clerk-19 R.N.-10 PHN-21 NX-21 M.D.-10 Nutrit.-6 Dental-7 PHN Super.-12	Recruitment School personnel-10 hours PHN-10 hours CHW-25 hours Clinic @ 16 hours for a total of 3 groups of children 1 M.D. 1 PNP 1 R.N. 4 CHW
Finding	Screen 42 parents notified 26 responded 13 screened Referrals 8 Dental	Screen 26 scheduled 2 cancelled 24 screened Referrals Not known	Screen 43 unscreened 24 appointed 22 screened Referrals and problems 4 caries, 7 needed immuniz., ENT, anemia, warts, enlarged liver, obesity, recheck vision/hearing	Screen 54 unscreened 31 appointed 23 screened Referrals 8 caries, lazy eye, allergy, behavior, enuresis, scoliosis, dental emergency, mild gingivitis, nevus on chest, 10 need immuniz.	Screen 500 students from all grades 120 scheduled 107 completely screened Referrals 42 problems including 14 hgb, 14 caries, eye-glasses, elevated BP, orthodontic problem, overbite, teeth malalignment, trace sugar in urine, lisp, strabismus, undescended testicle, 2 with infection detected by WBC, warts and foreign body in the ear

Public Health Nurses to parents not showing up for the informational meetings to obtain health histories, etc.(it was the opinion of the staff that CHW's or home health aides could accomplish this task in about one hour's time per child screened).

The clinics were divided into two sessions. The first session was a pre-clinic for obtaining measurements, drawing blood, performing urinalyses and vision and hearing testing (unless the school nurse could accomplish the vision and hearing testing sometime during the school day). The second session was for conducting the physical examination, integrating the lab results, and making referrals. The clinics were staffed by employees of the Health Department. Thus, Although only a few hours of direct staff time was required, the total direct and indirect staff time required for an ongoing program would be greater. The costs of screening in organizations such as schools are computed in Chapter 6.

The school referrals, at least in the Cambridge, Meadow Homes and Stege schools, reflected the same types of problems discovered in children of the same age groups screened in the regular Health Department clinics. A review of the findings reveals that 90% of the conditions would be discovered without the benefit of a child history. So, while it is helpful to have parents' input and to assist them in understanding the screening procedures, very little effectiveness is lost in the screening by omitting the child history for school age children. If a program is operating on a tight budget, dispensing with the child histories may save a great deal of time and money and will allow more time for follow-up efforts. The time to get a history is once a condition is identified and prior to diagnosis.

The Health Department was not anxious to continue the school screening because the percentage of children screened for which Medi-Cal could be billed ranged from 10% to 36%. Because of the CHDP program, the Health Department could

bill an additional 20% of children with incomes below 200% poverty. However, no one else could pay. The school wouldn't pay, and since the Health Department until recently, did not have outreach funds (except for the CHW's in the East and West County target areas), the savings in outreach costs through working in schools was not an economic argument. This is why local EPSDT units need flexibility to pay for screening all children in order to get the Medi-Cal children--at least in those schools having more than 50% Medi-Cal children, because the outreach required could be approximately 1/5* of that required for Health Department screening outside the schools. However, the screening costs are similar if the fully allocated time is considered, and making referrals may be somewhat more difficult since the parent may not be at the screening.

The other major group effort was the work of the project staff in Richmond with the Boys' Club. The executive director of the Boys' Club requested project assistance to develop a comprehensive health program for members and their families. A CHW was assigned one-half day per week to assist the Boys' Club in planning and implementing a health education program and in recruiting Boys' Club participants for screening. The Club made the physical exam mandatory for participation in Club activities. Eight to ten members were recruited into the EPSDT clinic weekly, with less than a 1% broken appointment rate. A Health Day Fair was held on June 28, 1975, from 8:00 a.m. until 3:00 p.m., for 189 pre-registered children. Of the 189, 89 received complete screens, 35 received partial screens, and 52 were rescheduled due to missing consent forms, histories, etc. The Richmond Police Department provided transportation for 25% of the participants. The staffing for the clinic was as follows:

2 Health Educators (Health Education and Health Exhibits)
6 Physicians (Physical Examinations)
4 Registered Nurses (Lab Work-up)
2 Parent Volunteers (Filled-out Lab Slips)

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*only with high volume, and minimal parent involvement.

6 Boys Club Staff	(Routing of Patients and Controlling Crowd)
12 EPSDT Staff	(Overall Coordination of the Screening Clinic) Their responsibilities included: registration, measurements, hearing and vision testing, urine testing, and supervision of volunteers.

The project with the Boys' Club was chosen as a pilot program for all of the Boys' Clubs of America.

The teen council was another aspect of recruitment which should be mentioned. The group was initiated as a discussion group on problems concerning teens--primarily weight problems--but after several such meetings, the interest of the group waned. At that time it was converted and expanded into a Teen Advisory Council, with a total membership of 17 and a core group of 8. They visited the clinic and submitted the following recommendations:

- Separate waiting area for older participants
- Reading materials in waiting areas
- New coat of paint for the building
- A special clinic for teens

The Teen Council decided that they should perform a survey to determine the needs of teens. However, the schools in the area blocked the idea and the Council very quickly lost momentum. The overall good experience with this group led the County to propose and secure funding for a program in Adolescent Health Care which is to be conducted in an area where schools are anxious to cooperate.

Conclusions about Organizational Outreach

Organizational outreach initially faced problems of confidentiality, private physician opposition, and low priority of health aspects in the schools, but when staff began to talk to representatives of the organizations involved, their efforts proved fruitful. A full-time liason was needed with the Social Services Department to generate referrals to the Health Department clinics. Planning meetings were held with schools, and significant numbers of

kindergarten children were screened. Future planning with these schools would require very little time, and the process could be quite cost effective with high volume and the elimination of the child histories and avoiding the use of CHW's to gather necessary information from parents. The financing of the school efforts remained a problem, since among the particular schools approached there were less than 50% Medi-Cal eligible children, therefore less than 50% were billable.

The Boys' Club made EPSDT screening a requirement for participation in Club activities, and a Teen Advisory Council made recommendations for improving clinic atmosphere for adolescents. When computing staffing ratios and activities in the area of outreach, a portion of staff time should be allotted for such organizational endeavors.

CHAPTER 4

SCREENING FINDINGS

A total of 12,400 different children received 19,816 screens between March, 1974, and May, 1977, throughout Contra Costa County, according to the information contained in the HSRI data system as of May, 1977. Through July of 1977, Contra Costa County children have subsequently received 838 additional screens, to give a stabilizing rate of screening in the County of approximately 430 per month. However, the results reported in this chapter refer primarily screening conducted between March, 1974, and May, 1977. This chapter provides the basic description of the results of the screening effort--problem areas for children needing but not receiving selected screening steps, the types of referrals made, the newness and seriousness of conditions found, the rate of treatment received, and problems encountered with follow-up. Two experiments are described. The first involves dual screening of a group of children to search for the extent of and reasons for false negatives in order to determine the quality of the screening being provided. The second experiment is a follow-up study conducted in Contra Costa County to determine the effectiveness of intensive follow-up case monitoring. The chapter concludes with a description of the conditions brought under treatment in East and West County. Conclusions regarding the data presented in the chapter are summarized at the end of the chapter.

Characteristics of Children Screened

The characteristics of children screened varied, as expected, by County division--West (West target[1], other West), East (East target, other East), and Central

[1] Richmond=West target, Brentwood/Oakley=East target, and parts of Concord/Pleasant Hill represent Central target. These distinctions are discussed in Chapter 2.

(Central target, other Central), and "Other". Tables 4.1 through 4.3 focus on the target areas of each part of the County, placing all surrounding areas not included in the direct project into a category called "Other". Table 4.1 shows the ethnic majority as percentages of children screened in each area to be 52% Mexican-American in East County, 67.7% Black in West County, and 86.3% Anglo in Central County. In West County, 48% of the total screened were on Medi-Cal (California's Medicaid Program), with Central and East County having 36% and 17%, respectively. With regard to age distribution of the 19,816 screens performed, the Central County target area and the non-target areas of other parts of the County had the largest percentage of children screened under eleven months of age. This was due to the fact that they were operating without the assistance of outreach efforts, and, thus, were essentially the traditional Maternal and Child Health well-child clinics. With the exception of East County, over one-half of the screens performed were on children under five years of age. However only one third of the low income children were under age five according to Table 2.1.

Table 4.2 shows how the use of health services during the twelve-month period prior to screening differed according to Medi-Cal eligibility status, geographical location within the County, and ethnicity, and Table 4.3 cross-tabulates these variables. The original screens were used because information on previous use of health services was only requested on the child history sheet, which was completed at the original screen. The health providers which might have been seen include dentists, physicians, optometrists, hospitals, emergency rooms, etc. Patterns emerging from these two tables are that among Mexican-American children in all parts of the county, and Black children in Richmond, the Medi-Cal eligibles had a greater previous use of services than did the non-Medi-Cal eligibles; geographically, Central County had the highest rate of previous use of services; and, ethnically, those children classified as "white" had the greatest previous use. There was an average of 4.27 persons living in the homes

TABLE 4.1

Distribution of Screens with Characteristic Categories

Area of the County by Ethnicity

Area	Number Screened	% of Screens in each Ethnicity			
		Black	Mexican American	White	Other
East	3,342	0.5%	51.8%	44%	3.6%
West	6,612	67.7%	19.1%	12.2%	1.0%
Central	1,198	2.4%	5.2%	86.3%	6.1%
Other	8,664	22.7%	19.6%	53.3%	4.5%

Area of the County by Medi-Cal Status

Area	Number Screened	% Medi-Cal
East	3,342	16.8%
West	6,612	48.4%
Central	1,198	35.7%
Other	8,664	28.1%

Area of the County - Age

Area	Number Screened	% of screens in each age category				
		0-11 Mo.	1-4 Yr.	5-8 Yr.	9-12 Yr.	13-16 Yr.
East	3,342	17.1%	32.5%	20.6%	11.0%	13.5%
West	6,612	19.3%	38.7%	16.8%	12.9%	9.2%
Central	1,198	26.4%	43.0%	14.3%	7.0%	7.4%
Other	8,664	31.2%*	47.7%	11.6%	5.3%	3.1%

*The central target area and other non-target areas of the county had younger children because the satellite clinic had a history of being MCH well child clinic for babies.

TABLE 4.2

Previous Health Utilization of the Population in the 12 Months Prior to Screening
By Eligibility, Area, Ethnicity Based in Contra Costa County
March 1974 - May 1977

MEDI-CAL	NUMBER OF ORIGINAL SCREENS	% OF TOTAL SCREENS	% OF GROUP THAT SAW ANY HEALTH PROVIDER IN PREVIOUS 12 MONTHS
Eligible	4,837	39.0%	63.0%
Not Eligible	7,563	61.0%	69.0%
	12,400		
AREA			
Brentwood Target	2,169	17.5%	61.2%
Richmond Target	4,775	38.5%	62.6%
Central County	810	6.5%	78.9%
Other	4,646	37.5%	66.9%
	12,400		
ETHNICITY			
Black	4,725	38.0%	63.8%
Mexican American	2,558	21.6%	55.1%
White	4,533	36.5%	71.8%
Other	426	3.5%	65.5%
	12,242		

TABLE 4.3

Percent of Children Screened Who Had Seen
A Health Provider in Previous 12 Months

MEDI-CAL STATUS* AND AREA OF COUNTY	ETHNICITY Black N**	Black % With Care	Mex.-Amer. N	Mex.-Amer. % With Care	White N	White % With Care	Other N	Other % With Care
Richmond								
Medi-Cal (Eligibles)	1,980	66.8%	145	57.2%	310	67.6%	21	76.2%
Non-Medi-Cal	1,443	59.2%	647	51.2%	287	75.6%	29	62.0%
Brentwood								
Medi-Cal	4	75.0%	192	61.5%	68	72.0%	14	71.4%
Non-Medi-Cal	10	20.0%	843	54.8%	871	65.6%	64	62.5%
Central								
Medi-Cal	4	66.7%	22	81.8%	333	73.9%	37	67.6%
Non-Medi-Cal	12	83.3%	18	72.2%	352	85.2%	22	72.7%
All Remaining (Mostly Richmond)								
Medi-Cal	644	64.8%	147	62.6%	897	74.2%	86	74.4%
Non-Medi-Cal	626	64.2%	504	53.9%	1505	70.4%	153	58.8%

*Medi-Cal is California's Medicaid program.

**N = Number of original screens.

of the children receiving the 19,816 screens, with an average in the Central County target area being slightly lower (3.82) and somewhat higher in the East County target area (4.78). Except for Central County, less than 2% of the represented families had more than eight living in one household. The median family size was 3.5, 3.1, 4.0, and 3.0, in West, Central, and East County target areas and other areas, respectively. The mean number of children per household was 2.68, with 2.97 in West and East County and 2.18 in Central County.

A client attitude study was conducted at the East and West County target area clinics. The data resulting from this study revealed great similarities between East and West County for the education level (10.5 years), age of mother (28-29), and the employment status of mother (25% employed). However, the marital status of the mother differed substantially between the East and West County. Over 90% of the mothers in the East County clinics were married, while only 61% of those in West County clinics were married, with 16% being single and 23% either divorced, widowed or separated.

Even though 63% of children receiving screens had been to some health care provider during the previous three months, only 1% had received a screen equivalent to the EPSDT screen, including hearing, vision, physical, lab, and dental screening. This low percentage may have a downward bias as representative of the general preventive care in the County, because during outreach activities the CHW's encouraged all families with a source of on-going primary care (physician or other private M.D.) where they periodically received thorough health examinations (especially Medi-Cal eligible children) to get the EPSDT exam from that physician. In the outreach study, however, only 10-15% indicated that they had a private physician from whom they wanted to receive the screen. When asked about the types of screening procedures received in the twelve-month period prior to the original screen, 10.5%, 12.4%, 8.3%, 30%,

and 27% indicated that they had received a similar test in the areas of hearing, vision, lab, physical, and dental, respectively.

Need For and Receipt of Selected Screening Procedures

The screening sheet contained a list of the various screening procedures, with two check boxes by each procedure: one to check if the procedure was needed or not, according to the child's age and previous screening experience; and the other to check whether or not the procedure was actually performed ("done by"). The screening sheet is attached as Figure 4.1. Discriminant Function Analysis was used in the analysis of much of the data compiled for this report. In this instance, it was employed to isolate the factors affecting the determination of need for a particular procedure. The functions for each procedure are shown in Appendix M. In this chapter the results will be summarized in the following statements[2]:

- age was always the most important variable, with older children more likely to need a procedure at a particular screen.
- screen sequence was the next most important factor, with the periodic screens requiring fewer procedures.
- Medi-Cal eligible children were more likely to need a procedure. The data set used for this analysis included screens from all parts of the County--including those not in the project target areas, which had fewer Medi-Cal eligibles, according to the tables presented earlier in the chapter. Therefore, the project brought additional procedures to the East and West County target areas. Children in Central County were less likely to need any given procedure. As pointed out earlier in the chapter, Central County children were considerably younger and had greater previous utilization of the health care providers, both of which greatly reduce the need for procedures.

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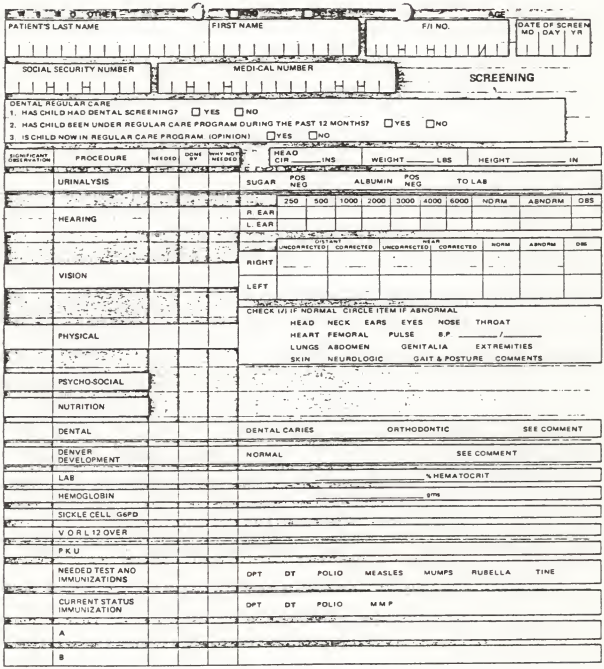
[2]Discriminant Function Analysis is a statistical technique wherein the dependent variable has only two categories in a classification (needed/not needed), and those independent variables which are maximally different for each classification (when other factors are considered and held constant at the average of that variable) will get a high F statistic for entry of that variable.

Figure 4.1

Screening Sheet



FORM S-KSS 2-74

The statement of children needing each procedure, then, appears to have a rational base and shows that various children can all have complete screens with quite a a different mix of screening procedures.

Once a child's record was marked to show the need for a particular procedure, then it was further determined whether or not that procedure was completed. With the exception of urinalyses, PKU's, and some vision testing, over 90% of all procedures needed were completed. It can be seen in Table 4.4 that 67.1% of needed PKU procedures were completed, 74.2% of needed urinalyses were completed, and 88.2% of needed vision tests were completed. These tests require cooperation on the part of the child--to urinate for the PKU and the urinalysis, and to respond correctly to the instructions for the vision. The discriminant functions showing the relationships between certain factors and the receipt or non-receipt of needed screening procedures are included as Appendix N. The canonical correlations for all of the screen steps were rather weak, but it appears that of those children needing the PKU procedure, younger children in West County were least likely to receive the procedure, with a decline in the percentage of those receiving with each project year (i.e., the passage of time from the beginning of the project). However, in all of the 1640 PKU tests performed during the project, not a single positive finding was made. It is required by law that the PKU test be given at birth, with the results recorded on the birth certificate. Then only the very young children (under three months) screened who were not born in a hospital should need the test.

According to the discriminant function, the urinalysis was not received when needed among younger children and on the original screen, and it was accomplished less in the non-target areas of the County. The lowest compliance was among children age 0-4, as it is difficult to secure the cooperation of young children

TABLE 4.4

Number needing and percent receiving specific screening tests for all ages and including original and periodic rescreens (all parts of Contra Costa County)

Screening procedures	# screens needing (of 19816 screens)	% of screens needing that received the procedure
Hearing	8453	91.8%
Vision	8780	88.2%
Dental	12017	99.1%
Physical exam	19480	99.7%
Urinalysis	14090	74.2%*
T.B. test	9269	94.3%
Hemoglobin	13434	95.2%
Sickle cell	2925	96.3%
VDRL	2179	95.3%
PKU	2444	67.1%**

*Lowest compliance occurred for children age 0-4 and was significantly different in parts of the county - indicates that it is a difficult procedure to collect urine in young children. Coupled with the low rate of positive findings (less than 0.5% of those screened), it is recommended that the urinalysis only be done when history indicates.

**Low Compliance on PKU was in West County, however, no positives were found in the 1,640 children screened, and therefore suggest deleting it from the screening tests but including it on birth certificates. Not to issue a birth certificate unless PKU results are on the birth certificate would get 100% compliance with the law without any extra cost to anyone.

Vision and Hearing lowest among younger children in West County (60% and 77% respectively) indicate need for staff encouragement to do vision testing and hearing testing.

"R"- The child scored positive on the test (such as vision or hearing), but, according to County policy, had to be retested prior to any referral being made to an optometrist, opthalmologist, audiologist, etc.

After a child was retested and again indicated a positive finding, and, thus, the probable existence of a problem, a problem sheet was completed for each individual problem (see Figure 4.2). The upper portion of the problem sheet form was sent to HSRI for data entry and the middle portion of the form was sent out as a self-returning mailer to the physician to whom the child was being referred. Therefore, the problem sheet served as a mechanism for documenting problems referred to a provider. However, many lab findings such as slightly high WBC (indicating an infection), sickle cell trait, minimal G6PD[3], and borderline anemia were not reported on the problem sheet (because lab results were not available at the time problem sheets were filled out and because of their lack of immediate seriousness), but individual letters were sent to the parents, describing the child's condition and making appropriate recommendations. When the case was severe enough to require referral for medical care or for one-to-one nutritional or genetic counseling, a problem sheet was completed. In most of the tables to be presented in this chapter, the abnormalities are represented by the problem sheets. However, it should be noted that according to data reported by special County programs, a total of

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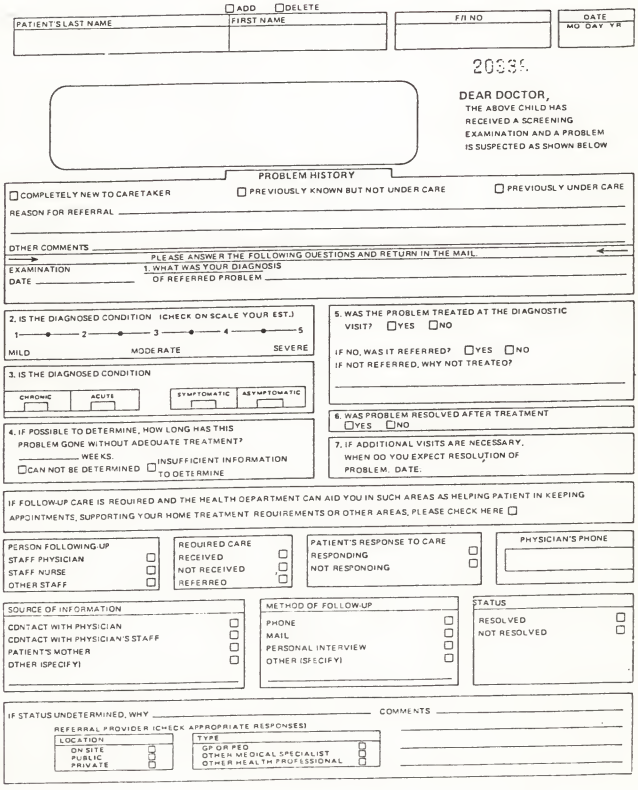
[3]Glucose-6-Phosphate Dehydrogenase Deficiency. According to Kempe, et.al., (Current Pediatric Diagnosis and Treatment, Lange Medical Publications, Los Altos, California, 1974.) about 10% of American Black males and 1-2% of females tend to manifest the deficiency. Children exposed to certain drugs will have episodes of hemolysis. Such drugs include sulfonamides, sulfones, antipyretics, analgesics, synthetic vitamin K, and unsoaked fava beans. Aspirin can really make the child very sick and susceptible to infections.

Figure 4.2

Dear Doctor, Referral Sheet



☐ ADD ☐ DELETE

PATIENT'S LAST NAME | FIRST NAME | FI NO | DATE MO DAY YR

2039.

DEAR DOCTOR,
THE ABOVE CHILD HAS
RECEIVED A SCREENING
EXAMINATION AND A PROBLEM
IS SUSPECTED AS SHOWN BELOW

PROBLEM HISTORY

☐ COMPLETELY NEW TO CARETAKER ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE ☐ PREVIOUSLY UNDER CARE

REASON FOR REFERRAL

OTHER COMMENTS

PLEASE ANSWER THE FOLLOWING QUESTIONS AND RETURN IN THE MAIL.

EXAMINATION DATE

1. WHAT WAS YOUR DIAGNOSIS OF REFERRED PROBLEM

2. IS THE DIAGNOSED CONDITION (CHECK ON SCALE YOUR EST.)
1 — 2 — 3 — 4 — 5
MILD MODERATE SEVERE

3. IS THE DIAGNOSED CONDITION
CHRONIC ☐ ACUTE ☐ SYMPTOMATIC ☐ ASYMPTOMATIC ☐

4. IF POSSIBLE TO DETERMINE, HOW LONG HAS THIS PROBLEM GONE WITHOUT ADEQUATE TREATMENT?
_____ WEEKS.
☐ CAN NOT BE DETERMINED ☐ INSUFFICIENT INFORMATION TO DETERMINE

5. WAS THE PROBLEM TREATED AT THE DIAGNOSTIC VISIT? ☐ YES ☐ NO
IF NO, WAS IT REFERRED? ☐ YES ☐ NO
IF NOT REFERRED, WHY NOT TREATED?

6. WAS PROBLEM RESOLVED AFTER TREATMENT ☐ YES ☐ NO

7. IF ADDITIONAL VISITS ARE NECESSARY, WHEN DO YOU EXPECT RESOLUTION OF PROBLEM. DATE:

IF FOLLOW-UP CARE IS REQUIRED AND THE HEALTH DEPARTMENT CAN AID YOU IN SUCH AREAS AS HELPING PATIENT IN KEEPING APPOINTMENTS, SUPPORTING YOUR HOME TREATMENT REQUIREMENTS OR OTHER AREAS, PLEASE CHECK HERE ☐

PERSON FOLLOWING-UP
STAFF PHYSICIAN ☐
STAFF NURSE ☐
OTHER STAFF ☐

REQUIRED CARE
RECEIVED ☐
NOT RECEIVED ☐
REFERRED ☐

PATIENT'S RESPONSE TO CARE
RESPONDING ☐
NOT RESPONDING ☐

PHYSICIAN'S PHONE

SOURCE OF INFORMATION
CONTACT WITH PHYSICIAN ☐
CONTACT WITH PHYSICIAN'S STAFF ☐
PATIENT'S MOTHER ☐
OTHER (SPECIFY) ☐

METHOD OF FOLLOW-UP
PHONE ☐
MAIL ☐
PERSONAL INTERVIEW ☐
OTHER (SPECIFY) ☐

STATUS
RESOLVED ☐
NOT RESOLVED ☐

IF STATUS UNDETERMINED, WHY

COMMENTS

REFERRAL PROVIDER (CHECK APPROPRIATE RESPONSES)

LOCATION
ON SITE ☐
PUBLIC ☐
PRIVATE ☐

TYPE
GP OR FPD ☐
OTHER MEDICAL SPECIALIST ☐
OTHER HEALTH PROFESSIONAL ☐

2,185 children were tested for sickle cell trait[4] and disease between March, 1974 and July, 1975. Among these 2,185, 6.4% had the trait (hemoglobin A/S), 2% had a more severe trait (A/C), 0.1% had hemoglobin S-C disease (not as severe as sickle cell anemia), and 2 children had sickle cell anemia (S/S-C/C), which is a rate of .09%, or .915 per 1,000 Black children. The G6PD testing was conducted on 2,448 children during the same time-frame, with the result that 2% had the enzyme absent and an additional 5% had only minimal levels of the enzyme. When a child has a G6PD absent (and perhaps even a minimal presence) and it goes undetected, a great deal of medical costs can be generated for unnecessary tests to determine what might possibly be the cause of the child's problem. As will be shown in the chapter concerning treatment costs, the G6PD test can be a cost beneficial procedure in reducing the costs of medical care. Since many of the G6PD and sickle cell problems did not require referral, they will not appear in the data to the actual extent to which they were present in the population. Although the more serious cases were recorded, the overall prevalence is not known.

For the screening steps which could be assessed on the day of the screen, the positive findings throughout the County were as follows, where "positive" means either a check mark (significant observation) observe, or retest.

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[4]The trait occurs in about 8-10% of the Black population in the U.S. (Kempe, ibid., 1974) and is generally asymptomatic except for hematuria in 3-4% of the cases. However, the disease (S/S) is found in one in 500 U.S. Blacks and can be quite painful. Symptoms appear between 9-12 months of age, and the child has frequent crises. Many persons with the disease die in early adult life. The treatment involves attempts to terminate a "crisis" and to ease the pain.

Procedure	No. Screened	No. Positives	% Positives	Comments[5]
Urinalysis	10,406	171	1.6%	Higher in West County & Older Children
Vision	7,691	600	7.8%	Higher in West County & Older Children
Hearing	7,709	250	3.2%	Higher among Medi-Cal
Physical	19,346	9,677	50.0%	Higher in West County & Older Children & in Periodic Screens
Dental	11,851	2,908	24.5%	Higher in Older Children West County, & Non-Whites

As discussed earlier, the urinalysis is a time-consuming procedure, which reported very few positive findings. Of the 171 total positive findings in this category, very few were found to present a serious problem (to be discussed in the follow-up data presentation). It is recommended, therefore, that more accurate screening criteria be developed for the urinalysis screening procedure. The rates of positive findings for the hearing and vision screens were lower than might ordinarily be expected in a child population. However, it should be noted that a large portion of these children were under age 4, where conditions such as these have not had sufficient opportunity to manifest themselves. As will be discussed in the paragraphs following, the rate for dental findings was higher for the older children. The project often considered, but was never able to

[5]Relation shown by a discriminant function analysis of independent variables affecting the rates of findings--shown as Appendix o.

utilize, the impedance bridge for the audiometric testing. Perhaps children living in the Contra Costa County climate experience few middle ear infections.

The rates of positive findings and referrals by age group for the most frequent findings are shown in Table 4.5. Taking each procedure, the percentage of positive findings (as a percentage of the number screened) were highest: for dental in the 5-11 year old group, at 32.7%; for anemia in the 0-4 group, at 7.3%; and for vision and hearing in the 12-21 group, at 9.8% and 3.3%, respectively. The referrals were about half the rate of the positive findings for vision and hearing, due to the "retest before referring" policy. The dental referral rates were lower than positive findings because some children with dental caries were already scheduled to have the dental work done and, therefore, were not issued a referral sheet. At times, when the staff knew that the parents obviously could not afford to have the dental work done, no referral sheet was made up. The process, however, was supposed to be to fill out the referral sheet, marking the resolution as "no finances available". This is reflected in Table 4.6, where the results for these same most frequently occurring conditions are presented according to Medi-Cal status. Whereas 83% of the positive dental findings for Medi-Cal children were referred, only 62% of the positive dental findings for non-Medi-Cal children were referred. Table 4.6 also shows that the Medi-Cal eligible children tended to have slightly higher rates of positive findings and referrals. However, non-Medi-Cal children have a significant number of positive findings also. Such differences and the factors affecting them will be discussed in Chapter 5. Table 4.7 , the final table concerning the most frequent conditions found to be positive and referred, compares resulting findings by target area. For most procedures the percentage of positive findings and resulting referrals was significantly higher in the target areas than in non-target areas

TABLE 4.5

Most Screening Findings and Referrals
All Screens, March 1974 through June 1977,
Shown as a Percent of All Screening Exams
(Throughout entire County regardless of project areas)

Most Frequent Findings Category	All Screens (19816)		Age 0-4 (13148)		Age 5-11 (4339)		Age 12-21 (2313)	
	% Pos.	% Ref.	% Pos.	% Ref.	% Pos.	% Ref.	% Pos.	% Ref.
Dental	14.3%	10.4%	5.9%	3.8%	32.7%	23.9%	31.3%	23.6%
Anemia	5.9%	5.9%	7.3%	7.3%	3.3%	3.3%	2.9%	2.9%
Vision	3.0%	1.3%	0.5%	0.3%	7.1%	2.6%	9.8%	2.4%
Hearing	1.3%	0.2%	0.4%	0.05%	2.8%	0.5%	3.3%	0.3%

TABLE 4.6

Differences in Rates of Positive Findings and Referrals
in MediCal vs. non-MediCal Findings (All Screens, All Parts of the County)

Screen Procedure	% Positive Findings		% Referred	
	MediCal (6624)	Non-MediCal (13192)	MediCal (6624)	Non-MediCal (13192)
Dental	19.6%	12.2%	16.2%	7.6%
Anemia	6.0%	5.5%	6.0%	5.5%
Vision	4.0%	2.6%	2.2%	1.7%
Hearing	1.3%	1.2%	0.3%	0.3%

TABLE 4.7

Comparison of Rates of Positive Findings and Referrals for Different Areas of the County (All Screens, All Ages)

Screen Procedure	% of Screens that are Positive Findings			
	East (3342)	West (6612)	Central (1198)	Other (8664)
Dental	15.4%	23.4%	10.4%	8.4%
Anemia	4.9%	6.3%	5.5%	6.0%
Vision	3.1%	5.5%	2.3%	1.3%
Hearing	2.3%	1.5%	0.8%	0.7%

Screen Procedure	% of Screens that are Referred			
	East (3342)	West (6612)	Central (1198)	Other (8664)
Dental	9.8%	18.2%	6.6%	5.4%
Anemia	4.9%	6.3%	5.5%	6.0%
Vision	1.0%	2.2%	1.0%	0.7%
Hearing	0.3%	0.2%	0.2%	0.2%

of the County. For dental, anemia, and vision problems, West County (Richmond) had the highest rate of findings, which is not surprising considering that it is the lowest income region of the County. It was surprising, however, to find the rate of referrals for the non-dental conditions occurring most frequently were very similar for each part of the County. In order to further specify age/area of County differences, Table 4.8 shows the percentage of screens resulting in referrals of a specified type. It was surprising to note that, when controlling for age group differences, the medical findings (with the exception of vision) between West and Central County corresponded much more closely than those between West and East County. At times, diagnostic categories[6] are difficult to relate to. To further explain the types of conditions found, referred, and diagnosed, Figure 4.3 was prepared and enclosed at the end of this chapter to show the verbal descriptions of the conditions found in the various age groups of Medi-Cal children screened throughout the County between March, 1974 and June, 1977, (utilizing a more recently updated computer tape than was normally used for the majority of the analyses in this report). The wording shown was taken from the statement on the middle portion of the problem sheet (for the diagnosis) when available; otherwise, the statement listed at the top of the problem sheet, which was supplied by the screening clinic, was used. Those conditions found to be false positives were eliminated from the list.

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[6]Problems reported to the data system were coded into a 40-category group of ICDA codes. The verbal descriptions were also stored. Appendix P shows the problem codes utilized and their equivalent ICDA codings.

TABLE 4.8

PERCENT REFERRED OF NUMBER SCREENED BY AREA AND AGE
ALL SCREENS - CONTRA COSTA COUNTY
BETWEEN MARCH 1975 AND MAY 1977

AREA OF COUNTY	WEST COUNTY PROJECT AREA (Richmond)			CENTRAL COUNTY PROJECT AREA - (Concord)			EAST COUNTY PROJECT AREA - (Brentwood)			NONPROJECT* AREA OF THE ENTIRE COUNTY			ENTIRE COUNTY PROJECT AND NON-PROJECT SCREENS		
Age Groups (In Years)	0 - 4	5 - 11	12 - 21	0 - 4	5 - 11	12 - 21	0 - 4	5 - 11	12 - 21	0 - 4	5 - 11	12 - 21	0 - 4	5 - 11	12 - 21
1. Number of Screens	3,829	1,766	1,011	831	232	134	1,654	973	709	6,834	1,386	459	13,148	4,339	2,313
2. Number of Referrals	1,190	1,031	640	130	105	62	399	399	208	1,078	521	267	2,797	1,996	1,177
3. Referrals per 100 Screens	31	58	63	16	45	46	24	35	29	16	38	58	21	46	51
A. Dental Referrals per 100 Screens	08	33	34	01	20	16	05	18	11	02	18	23	04	24	24
B. Medical Referrals per 100 Screens	23	26	29	14	25	31	19	17	19	14	20	35	17	22	27
4. Problems Referred as a Percent of Screens															
A. Hearing	0%	0.3%	0.4%	0%	0.4%	0.7%	0.1%	0.5%	0.3%	0.1%	0.6%	1.3%	0.1%	0.5%	0.6%
B. Vision	0.5%	4.2%	5.7%	0.2%	1.3%	5.2%	0.2%	1.2%	2.8%	0.2%	2.0%	4.4%	0.3%	2.7%	4.5%
C. Dental	7.6%	32.6%	33.9%	1.3%	20.3%	15.7%	4.8%	17.7%	10.7%	1.7%	17.7%	22.9%	3.8%	23.9%	23.6%
1) Caries	5.3%	25.6%	23.5%	1.0%	15.9%	10.5%	4.3%	16.3%	8.9%	1.2%	13.1%	15.7%	2.8%	19.1%	16.7%
2) Other Dental	2.3%	7.0%	10.4%	0.4%	4.3%	5.2%	0.5%	1.3%	1.8%	0.6%	4.6%	7.2%	1.0%	4.8%	6.8%
D. Anemia	8.4%	3.5%	3.5%	6.5%	3.9%	3.0%	7.7%	2.4%	2.0%	6.7%	3.6%	2.8%	7.3%	3.3%	2.9%
E. Orthopedic	1.5%	1.4%	1.3%	1.6%	0.4%	3.0%	0.9%	0.4%	1.0%	0.8%	0.7%	2.4%	1.1%	0.9%	1.5%
F. Dermatological	2.2%	2.0%	2.2%	0.5%	0.9%	2.2%	0.7%	0.8%	1.7%	0.8%	1.5%	1.7%	1.2%	1.5%	1.9%
G. Ear	1.5%	1.8%	1.2%	0.7%	3.9%	1.5%	2.5%	1.7%	0.1%	0.7%	0.9%	2.4%	1.2%	1.6%	1.2%
H. Heart	0.8%	1.2%	1.1%	0%	1.7%	0%	0.6%	1.0%	0.8%	0.1%	0.7%	1.5%	0.4%	1.0%	1.0%
I. Upper Respiratory	1.7%	1.5%	1.0%	0.5%	0.9%	1.5%	0.8%	0.8%	0%	0.5%	0.9%	1.5%	0.9%	1.1%	0.8%
J. Genitourinary	0.7%	1.0%	0.8%	0.1%	0.9%	0.7%	0.5%	0.3%	0.1%	0.2%	0.5%	0.7%	0.4%	0.7%	0.6%
K. Eye	0.8%	0.7%	1.7%	0.8%	0.4%	0%	0.8%	1.5%	0.4%	0.6%	1.2%	1.5%	0.7%	1.1%	1.2%

*Children who were screened in the Contra Costa County Medicaid screening, child health conferences, etc. therefore outside the census tracts designated as project areas. Most of these children were from the west county area surrounding Richmond.

The figure lists the descriptions and their frequency for each age group (0-11 months, 1-4 years, 5-8 years, 9-12 years, and over age 12). Since these findings represent only Medi-Cal children, they could be useful for the planning of other EPSDT programs with a mix of Black, White, and Mexican-American children. The statistical charts tend to obscure some of the more interesting cases found during the oroject. In order to convey a feeling for some of the uncommon assistance rendered by project staff to the younger members of these communities during the course of this project, as well as the success of results obtained, several exemplary case examples are presented in brief form as Figure 4.4 on the following page.

Since the primary project was conducted in the East and West County target areas between March, 1974, and May, 1977, Table 4.9 is included to summarize the statistical base of the types of conditions found there. The table shows that among 6,458 children given original screens, there were 1,514 medical and 1,219 dental referrals (.23 medical and .19 dental referrals per screen). The conditions referred are categorized by special groups of ICDA codes which were used by HSRI in its data system to code the type of problem as it was described on the problem sheet. These groupings are detailed in Appendix P . The rates shown are per 1,000 children screened. As shown in Table 4.9, 1,435 (894 medical and 541 dental) problems had returned diagnoses from the physician, dentist, or Public Health Nurse to whom they had been referred. This means that only 59% of the medical (and 44% of the dental) referrals resulted in known diagnostic conclusions (that were not false positives) available on the HSRI data system at the time of analysis. The diagnosed conditions are shown as a rate per 1,000 screens. The columns of rates per 1,000 screen may be compared to roughly determine where the diagnoses were not returned, although a problem may have been referred as

FIGURE 4.4
Case Examples

CASE 1: "FLOPPY BABY"

At Screen: A two month old child was lethargic, limp, would sleep most of the time, and, when awake, had little expression.

Project Action: Referred to a neurologist who conducted a muscle biopsy and diagnosed the child as having Muscular Dystrophy. The child was followed to make sure that complications were avoided.

Result: At age 4, the child is doing well.

CASE 2: THYROID PROBLEM

At Screen: The child looked very dull and unresponsive. (Father was disabled due to a back injury and hearing loss).

Project Action: Referred to a surgeon and a subtotal thyroidectomy was done as the child was having difficulty swallowing.

Result: Currently doing okay. Enlargement would have eventually caused too much pressure, the child would have become nutritionally weakened, and have difficulty in remaining alert.

CASE 3: LEGG-PERTHES DISEASE (OSTEOCHONDRITIS)

At Screen: In history, found out that had been diagnosed by a doctor in Texas as having Legg-Perthes Disease, but never wore braces.

Project Action: Referred to orthopedic surgeon,and PNP encouraged child to get and wear braces.

Result: Through case management follow-up, got the child to wear braces which he wore for five months. Due to wearing the braces, the pressure was removed, avoiding the head of the femur from becoming mushroom shaped--thereby avoiding special education classes, and extreme pain and difficulty in walking. The mother was so happy that she brought the twin brother--who was also referred, and found to have the same problem developing.

CASE 4: BREAST ENLARGEMENT IN MALE (GYNECOMASTIA)

At Screen: Came to screen by referral from school nurse. He was depressed and withdrawn. He had enlarged breasts, and was ashamed to go to P.E. He visited a doctor who gave him an excuse from P.E., but did nothing for the boy's condition.

Project Action: Referred to surgeon under Crippled Children's Service for plastic surgery.

Result: He is now well adjusted. He is in a "continuation school" since he had missed a great deal of school earlier due to embarrassment about his condition.

CASE 5: MUSCULAR DYSTROPHY

At Screen: Referred by school nurse to the clinic because the child couldn't do push-ups. Physician discovered that he had weakness and asymetry of muscles in the chest and cafe au lait spots bilaterally on posterior hips.

Project Action: Referred to doctor. A diagnosis of muscular dystrophy was confirmed by a biopsy.

Result: Child was under treatment by the doctor, but later moved out of the area.

CASE 6: CYSTIC FIBROSIS

At Screen: Had a URI each time on the periodic check-ups. Belonged to Kaiser and had gone to Kaiser for URI. EPSDT clinic noticed repeated URI.

Project Action: Referral to doctor at Kaiser for sweat chloride test for Cystic Fibrosis. Confirmed Cystic Fibrosis. Has been on treatment to keep the airway clear and is doing well.

Results: A condition which is difficult to diagnose was discovered. Placing her on the treatment has helped keep the lungs clear and, therefore, live a more comfortable life without constant coughing. Uncontrolled, survival beyond five years is unlikely due to extreme loss of salt. Control of the disease will reduce the cost of medical care.

CASE 7: HEMOPHILIA

At Screen: Internal hemorrhages into the joints were discovered on a five year old male who had a history of repeated nosebleeds and joint swelling.

Project Action: Sent to doctor for complete diagnosis; was found to have hemophilia.

Result: Avoiding injury and rough activity in the future may prevent severe internal hemorrhaging and possible death.

CASE 8: CHILD ABUSE

At Screen: Initial physical examination revealed small scales on the body,and on periodic examination, it was discovered that the child complained about pain in the abdomen.

Project Action: Admitted to hospital. At that time found indications of potential child abuse. The Trauma Center got involved and got the child removed from home. The diagnosis was a ruptured pancreas due to a blow to the abdomen wall.

Results: Hopefully prevented future damage to work of health department and their testimony in the court.

CASE 9: TUBERCULOSIS

Screen: Baby (1 month) had bronchial pneumonia when came for screen clinic. Had been in hospital for URI.

Project Action: Referred child back to hospital and had pneumonia confirmed. Then found TB positive. It was discovered that the aunt, who had moved in from Mexico, had active TB. The whole family was then treated for TB.

Results: Now doing fine after all received treatment.

CASE 10: OSGOOD-SCHLATTER'S DISEASE

Screen: Teenaged girl came with mother to the clinic. She had a history of falling.

Project Action: Referred to orthopedic surgeon who confirmed Osgood-Schlatter's Disease (knee cap not giving proper support), and surgery was performed.

Results: Now walks well, and hasn't fallen since the surgery.

Table 4.9

Referrals in East and West Counties, Diagnosis and Seriousness
All Ages, Original Screens (6,458 Screened), March 74 - May 77

	(1) Problems Referred		(3) Reaching Diagnosis		(5) Seriousness	(6)	(7) Prev. Known, Under Care	(8)	(9)	(10)	(11)
	No. Referred	Rate/1,000 Screens	No. Diagnosed	Rate/1,000 Screens	No. Rated Mod.-Severe	% of Diagnosed (5)÷(3)	No. Under Care	% of Diagnosed (7)÷(3)	No. Successful Resolution (9)÷(1)	%	No. False Positive (11)÷(3)	%
Infective and Peresitic, including diarrhea	73	11.3	74	11.46	34	45.9	3	4.1	55	75.3	2	2.7
Pinworms	2	0.31	1	0.15					1	50.0	0	0
Neoplasms	19	2.94	5	0.77	1	20.0	1	20.0	12	63.2	1	20.0
Thyroids & Endocrine	5	0.77	2	0.31					5	100.0	1	50.0
Diabetes												
Nutritional & Metabolic/ G6PD	22	3.41	11	1.70	1	9.1			14	63.6	1	9.1
Obesity	10	1.55	10	1.55	7	70.0	0	0	7	70.0	0	0
Anemia	287	44.44	174	26.94	23	13.2	1	0.6	145	50.5	10	5.7
Psychoses	24	3.72	14	2.17	7	80.0	1	7.1	11	45.8	0	0
Speech Disorder	14	2.17	8	1.24	1	12.5	0	12.5	5	35.7	0	0
Mental Retardation												
Nervous System	3	0.46	5	0.46	1	20.0	1	20.0	1	20.0	0	0
Convulsive	5	0.77	5	0.77	2	40.0			4	80.0	0	0
Vision	159	24.62	56	8.67	27	48.2	3	5.4	86	54.1	13	23.2
Eye	67	10.37	40	6.19	22	55.0	5	12.5	42	62.7	5	12.5
Ear	111	17.19	87	13.47	45	51.7	4	4.6	89	80.2	3	3.4
Hearing Loss	14	2.17	7	1.70	2	28.6	1	14.3	10	71.4	0	0
Rheumatic Fever	3	0.46	1	0.15	1	100.0	0	0	2	66.7	0	0
Heart Murmur/Hypertension	62	9.6	24	3.72	2	8.3	0	0	45	72.6	10	41.7
URI	77	11.92	59	9.13	34	57.6	1	1.7	57	74.0	1	1.7
LRI	9	1.39	11	1.70	6	54.5	2	18.2	7	77.8	0	0
Allergies	14	2.17	33	5.11	19	57.6	5	15.2	11	76.6	0	0
Caries	942	145.86	472	73.09	312	90.4	29	6.4	386	41.0	6	1.7
Dental - Other	277	42.89	69	10.68	28	40.6	4		117	42.2	4	
Upper GI	3	0.46	1	0.15	0	0	0	0	2	66.7		
Lower GI & Intestinal	6	0.93	2	0.31	2	100.0	1	50.0	5	83.3	1	50.0
Lower GI/Appendix	5	0.77	4	0.62	2	50.0	0	0	3	60.0	0	0
Hernia	15	2.32	7	1.08	3	42.9	0	0	9	60.0	2	28.6
Genitourinary	50	7.74	31	4.80	20	64.9	2	6.5	30	60.0	5	16.1
Menstrual	32	4.95	18	2.79	9	50.0	3	16.7	20	62.5	1	5.6
Pregnancy	1	0.15	1	0.31					1			
Dermatologic	119	18.43	71	10.99	36	50.7	6	8.5	92	77.3	2	2.6
Orthopedic	94	14.55	52	8.05	20	38.5	8	15.4	52	55.3	6	11.5
Congenital	25	3.87	18	2.79	10	55.6	1	5.6	17	68.0	1	5.6
FTT - failure to Thrive	4	0.62	2	0.31	1	50.0	0	0	4	100.0	0	0
III-Defined	101	15.64	24	3.71	6	22.2	0	0	61	60.4	8	29.8
Enuresis	13	2.01	2	0.31	2	100.0	1	50.0	5	38.5	1	50.0
Injury/foreign body/leed	38	5.88	25	3.87	12	48.0	1	4.0	27	71.1	1	4.0
Other Development - Ht/Wt	22	3.41	5	1.08	3	60.0	0	0	9	40.9	3	42.9
Denver	6	0.93	4	0.31	2	50.0	0	0	3	50.0	0	0
TOTALS	2,733	423	1,435	223	703	48.9%	84	5.8%	1,451	53.09%	89	3.2%
TOTAL MEDICAL	1,514	234	894	138	363	40.6%	51	5.7%	948	62.6%	79	5.2%
TOTAL DENTAL	1,219	188	541	84	340	62.8%	33	6.1%	503	41.3%	10	.1%

being one condition, but diagnosed as a different one. To the 894 diagnosed medical conditions must be added the 79 false positives, which raises the "diagnosed" rate to 64% of the medical problems referred. In addition, a problem may have resolved itself or the child may have received treatment without having the physician fill out and return the form; thus, a successful resolution could happen without a diagnosis. The dental, other-dental, vision, and anemia findings tended to have the lowest rates of diagnosed conditions in comparison to the number referred. However, both Medi-Cal and non-Medi-Cal children were included and it is possible that MediCal children had a better chance of getting care. Further analysis is possible by looking at the age and payment source statistics.

Tables similar to Table 4.9, but specific to age groups 0-3 months, 4-11 months, 1 year, 2-4 years, 5-12 years, and 13-21 years are available in Appendix Q. The totals from each of these tables are presented in Table 4.10A and Table 4.10B and was prepared for only those children who were on MediCal and screened in the project year 1975-76 and 1976-77. The rate of medical findings per 1,000 children screened on original screens is higher among the one year old children. Children over age five, however, had medical and dental problems in equal magniture so that the total number of problems were much higher in 5-21 age group.

The staff was requested to determine the problem resolution status six months following the date of the screen. HSRI provided the project quarterly with lists of children for whom no follow-up information had been received. The possible

codes for resolution included:

Code	Description
1	Treated on first visit to referred provider
2	Treated on subsequent visit
3	Still under care (but did get to care)
4	Problem confirmed, but no treatment necessary
5	Problem confirmed, but no treatment available
6	Moved, or no finances available
7	Parent uncooperative
8	False positive
9	Error in coding (should never have been coded as problem)

Problems were considered by project management to have been successfully resolved if they were coded as either 1 through 4,8, or 9. A total of 63% of the medical problems met this criteria for successful resolution. Problems categories below 60% were pinworms, anemia, psychosis, speech disorder, problems of nervous system, vision, caries, other dental, orthopedic, enuresis, height and weight, and developmental. Dental problems for all children on original screens had only a 40% successful resolution status in East and West County (for Medi-Cal and non-Medi-Cal children). For Medi-Cal children, the known successful resolution rates were 65% for medical problems and 57% for dental.

When a positive finding was referred, and the provider subsequently reported as the diagnosis that the screening lab or screening test represented an extra-ordinary situation not indicative of the child's actual health status (thus, erroneous in its finding of a problem), this was labeled a "false positive" finding. False positives comprised only 6.2% of all of the problems referred. Conditions with more than 20% false positives reported included pinworms, thyroid, vision, heart murmurs, lower gastrointestinal, genitourinary (96.7%), ill-defined, and enuresis. Only the pinworms and genitourinary had greater than 50% false positives. This adds additional data eliminating the urinalysis as part of a routine screen.

TABLE 4.10A

Rates of finding and "successful resolution" of medical and dental problems by age group for original screens in East and West Contra Costa County May 1974-March 1977.

Age	Number of Screens	Referral Rate Per 1000 Screens		Successful Resolution Problems Per 1000 Scrs.		% Successful Resolution Known	
		Medical	Dental	Medical	Dental	Medical	Dental
0-3 mos.	512	107.4	7.8	85.9	3.9	80.0%	50.0%
4-11 mos.	466	216.7	2.1	126.6	2.1	58.4%	100.0%
1 yr.	507	337.3	17.8	201.2	5.9	59.6%	33.2%
2-4 yrs.	1579	227.4	163.4	147.6	58.3	64.9%	35.7%
5-12 yrs.	2187	237.3	296.3	164.2	128.5	69.2%	43.4%
13-21 yrs.	1207	259.3	247.7	146.6	102.7	56.6%	41.5%
	6438						

TABLE 4.10B

Rates of findings and successful resolution of medical and dental problems for Medi-Cal eligible children in East and West Contra Costa County July 1974 to May 1977.

Age	Number of Screens	Referral Rate Per 1000 Screens		Known Successful Resolution		% With Successful Resolution	
		Medical	Dental	Medical	Dental	Medical	Dental
0-3 mos.	142	169.0	21.1	147.9	14.1	87.5%	66.8%
4-11 mos.	141	262.4	0	120.6	-	45.9%	-
1 yr.	176	403.4	22.7	244.3	0	60.6%	0
2-4 yrs.	500	282.0	198.0	184.0	84.0	65.2%	42.4%
5-12 yrs.	759	313.6	324.1	196.3	185.8	62.6%	57.2%
13-21 yrs.	364	357.1	365.4	263.7	186.8	73.8%	51.1%
	2082						

The percent of referred problems with successful resolution (according to Table 4.10B) was highest for the children under 3 months who were on Medi-Cal. Those children on Medi-Cal had 10 percentage points higher dental resolution, but except for the very young and the teens, no different medical resolutions. The problems with dental follow-up will be discussed in later paragraphs.

The doctor or dentist returning the problem sheet with a diagnosis, would often include a seriousness rating of that condition, which was their subjective opinion as to whether this particular case represented a mild, moderate or severe form of the condition. In total, 48.9% were rated moderate to severe, with an especially high proportion (more than one-half) of the problems rated as moderate to severe in the special diagnostic categories of obesity, non-refractionary eye problems, ear problems (primarily otitis), rheumatic fever (only one case), respiratory infections, allergies, caries, lower gastrointestinal, genitourinary, congenital problems, and enuresis. Table 4.11 breaks out the percent moderate to severe for the medical and dental problems, showing the dental problems to be more serious cases of problems than the medical.

Only 5.8% of diagnosed problems were judged to be under a plan of treatment prior to the EPSDT screen. The rest were either new to the mother or clinic or previously known but not under care. Categories having more than one-third of diagnosed problems already under care included nervousness and lower G.I.; and, in these cases, only one case was involved in each.

Immunization status was not a consideration on the problem sheets but was an integral part of the screening clinics. A list of immunizations was contained on the screening sheet. Those which a child needed were circled, and later a check mark was made by the circle when the needed immunization was received.

TABLE 4.11

Diagnosis results of children screened in East and West County--original screens: false positives, as a percent of deferred conditions, severity as a percent of diagnosed conditions; and previous ones as a percent of diagnosed conditions.

Age	Number of Screens	Rate of Diagnosed Conditions Conditions per 1,000 Children Screened		Percentage (of Diagnosed) Moderate to Severe		Percentage of Diagnosed Previously Under Care		Percentage of Referrals False Positive	
		Medical	Dental	Medical	Dental	Medical	Dental	Medical	Dental
0-3 mos.	512	76.2	1.9	33.3%	100.0%	7.6%	0	5.5%	0
4-11 mos.	466	128.8	2.1	43.3%	0	5.0%	0	5.0%	100.0%
1 year	507	242.6	5.9	32.5%	0	13.8%	0	1.8%	0
2-4 yrs.	1,579	136.2	63.3	41.9%	64.0%	4.2%	3.0%	4.7%	1.2%
5-12 yrs.	2,187	133.1	133.9	46.0%	45.7%	7.9%	8.8%	7.9%	.1%
13-21 yrs.	1,207	137.5	118.5	49.4%	65.0%	6.6%	2.8%	4.5%	0

Then as the child left the clinic, his immunization status was indicated on the screening sheet. In total, 89% of those needing an update in their immunization status received such immunizations. An average of 1.076 immunizations were given per child screened. It was found that 80-90% of children over age 5 being screened for the first time were current in their immunization status, indicating a successful County immunization program. The percentage of total children screened receiving the various types of immunizations were as follows:

DPT	to 27% of all those screened
DT	to 9.7% of all those screened
POLIO	to 36% of all those screened
MEASLES	to 12% of all those screened
MUMPS	to 11% of all those screened
RUBELLA	to 12% of all those screened

Since East and West County are most representative of high density low income areas, the following table is presented to indicate the need for immunization at various ages for children appearing for original screens.

Age Group	Number of Original Screens	Percentage Given Immunization			
		DPT	DT	Polio	MMR
0 - 3 mo.	512	32.0%	2.0%	32.0%	1.0%
4-11 mo.	466	39.7%	0.2%	39.7%	1.9%
1 yr.	507	25.6%	0.6%	31.6%	23.9%
2 - 4 yr.	1,579	29.3%	0.6%	32.0%	15.5%
5-12 yr.	2,187	9.4%	24.6%	34.9%	17.6%
13-21 yr.	1,207	0.7%	41.7%	37.1%	5.6%

Approximately one-third of the total children screened for original screens needed DPT or DT, one-third needed polio vaccinations, and 15-20% needed the immunizations for measles, mumps and rubella.

As mentioned earlier, the areas of dental and vision were two high-volume problem areas that had low rates of problems treated. Detailed tables concerning the resolution of various problems are included as Appendix R . The significant points from those tables will be summarized here. Resolution status information was available for approximately 90% of all problems referred (except for the non-project County areas, where only 69% of the problem sheets were returned). Of those returned, only 40-50% of dental referrals actually saw a dentist (except for Central County, where 81% saw a dentist). Therefore, 90% return rate times 40-50% treatment rate leaves a documented show for treatment rate of 36-45% for dental. The vision problems indicated a similar pattern, with West County having the highest show rate at 66% (91% had known resolutions) in comparison to Central and East County with only 55%. Anemia, hearing, and dermatological problems had more than a 90% show for treatment rate when resolutions were known, indicating that high rates of routine medical treatment are possible with a health department setting--even with high numbers of non-Medi-Cal children.

Table 4.12 however, reflects that dental care requires special efforts, regardless of the screening site location. This table shows that children with Medi-Cal coverage received a higher percentage of treatment for dental problems found by some 20-25 percentage points in Central County (85% for Medi-Cal versus 60% for non-Medi-Cal) and by 18 percentage points in East and West County (55% for Medi-Cal versus 37% for Medi-Cal). The 85% rate of dental referrals receiving care for Central County, which has an excellent resource base, is probably the

TABLE 4.12

Rate of Dental Treatment Received after Screening
by Area of the County and Medi-Cal Eligibility Status for
all Dental Problems Referred and Followed

Part of the Country	Medi-Cal Status	No. of Dental Problems	No. of Problems Followed	Percent of Children with Dental Problems that saw a Dentist
Central	Medi-Cal	48	42	85%
Central	Non-Medi-Cal	11	10	60%**
East and West*	Medi-Cal	537	477	55%
East and West	Non-Medi-Cal	650	575	37%**

*East and West county children were combined because of the similarities of follow up treatment.

**The difference between Medi-Cal and non-Medi-Cal children represents the differential rate of treatment that can occur when economic barriers are removed. Notice, however, that in East and West county only 55% of the Medi-Cal children were served--in combination of resource unavailability and patient compliance. The 85% compliance in the Medi-Cal children of Central county is reflective of a better resource base and better follow-up (due to a smaller case load) but indicates the existence of an upper limit on the show for treatment rate in dental problems.

maximum rate possible without the employment of super-intensive efforts. The Medi-Cal 55% show rate in East and West County reflects both a resource limitation and a problem in encouraging clients to follow-through to treatment. Such situations exemplify the need for special dental treatment funds to be made available to local programs to either contract with private dentists for reservation of their services in certain time blocks and ensure that the children appear for these appointments, or to establish, equip and staff a dental clinic adjacent to the screening clinic, where high risk cases can be treated immediately following the screening. Another possibility would be the purchase, equipping and staffing of several mobile dental vans to provide accessible and timely dental care.

In summary, a reasonable expectation is that somewhere between 15 and 40% will not get dental care under any circumstances depending on cultural background, and that economic barriers will create another 15% fall-off in service.

In terms of both medical and dental problems, overall rate of show for treatment appears low, but Table 4.13 shows that 90% of the more severe cases did receive treatment, once the diagnosis was made. It's just that getting the diagnosis was the overwhelming problem. The resolution status of problems referred from January, 1975 until February, 1976 (a smoothly operating period) is shown in Table 4.14. The Medi-Cal eligible children had slightly more problems followed-up; and among those followed, higher resolution rate. While the Medi-Cal helped somewhat, the non-Medi-Cal rate of treatment was rather surprising, although the Central County high utilizers were included.

Follow-Up Efforts and Techniques

The follow-up efforts and techniques of the Public Health Nurses provided a sound base for follow-up activities. To determine the extent of follow-up once the problem had reached diagnosis, the principal evaluator took the twenty

TABLE 4.13

Percent of Moderate and Severe* Conditions that are Treated or Under Treatment**, By Age Group

Contra Costa county - East and West county/original screens

Age	# moderate-severe	# and % of moderate and severe under care
0-3 mo	14	100%
4-11 mo	21	100%
1 yr	39	33/39 = 84.62%
2-4 yrs	152	131/152 = 86.18%
5-12 yrs	316	294/316 = 93.04%
13-21 yrs	164	145/164 = 88.41%
	706	638 90.37%

*It must be pointed out that the severity rating was assessed by the diagnostician to whom the child was referred. Therefore all of these children got to diagnosis.

**Still under treatment means that the child needs continuing monitoring of the condition, and is getting that monitoring by a physician or other health professional.

TABLE 4.14

Resolution Status of Problems According to Source of Payment for Medical Services

Contra Costa County - Entire County

Source of medical payment	# with problems Jan 75-Feb 76	# and % of problems with follow-up status by Aug 76	Number with given resolution status and percent of problems followed: Resolved	No treatment due to moving or lack of finances
Medi-Cal	1035	683 (65%)	521 (76%)	49 (7%)
Cash, mixed unknown	1206	764 (63%)	527 (69%)	131 (17%)
Cash only	803	478 (59%)	327 (68%)	94** (19%)

*includes resolved, false positive, under treatment, treatment not warranted

**73% of these 94 problems were not resolved due to lack of finance and 27% due to moving

Of those 69 who had no finances, 88% were dental and the rest were vision, an inguinal hernia in a 4 year old that was getting worse, and a speech disorder.

Of those 28 who had moved, only 42% were dental, the rest were low Hbg, heart, tonsillitis, crossed eyes, throat problems, and warts.

most serious conditions (with a seriousness rating of 4 or 5 on a five-point scale) reported in Richmond and personally reviewed the charts of those children. In every case, extensive Public Health Nursing follow-up had been provided (with many home visits) to arrange and ensure appropriate treatment. Only one of the cases was not completed, and this was in a case of potential child abuse which was turned over to an inexperienced social worker in the department of Social Services who subsequently dropped the case. The child showed up again at a later date in the emergency room with contusions, and was again picked up by the Social Service Department (this time by a more experienced worker).

The physician's portion of the referral sheet contained a box to be checked by the physician when he or she requested special Health Department assistance in assuring the successful resolution of a problem. This box was checked for the following problems: cystic fibrosis, low hemoglobin (seven cases), nutritional anemia (six cases), expressive language problem, myopia, astigmatism, anisometropia, otitis media (four cases), heart murmur (two cases), systolic heart murmur, arrhthymia, severe ventricular defect, nasal congestion, bronchiolitis, severe asthma (two cases), mild caries (three cases), moderate to severe caries (twenty-six cases), impetigo, malocclusion (five cases), gynecomastia (five cases), scabies (moderate to severe), severe tongue-tied, feeding problem, exzema, laceration hematoma. These were followed by the Public Health Nurses.

Although the base for follow-up was available through the Public Health Nurses, the County was not staffed to handle the volume of follow-up necessary in the project. This process was assisted by the problem sheet/referral form, which was returned by the physician in more than 50% of problems referred. For those not returned, telephoning the physician's office and obtaining the case monitoring information

from his or her chief nurse or office manager was found to be a very valuable technique. In the beginning the case management cases were assigned to various aides on an ad hoc basis; but when these cases began to form a backlog, actions were initiated to conduct weekly "staffings" of children who had been referred. The cases were discussed and assigned to individual CHW's, with input from the clinic staff, project management and Public Health Nurses. Approximately four hours were set aside each week for such staffing activity. At these meetings the CHW's would report their successes and problems encountered in obtaining treatment for these children. However, within the limits of the budget, a balance of both outreach and follow-up had to be maintained. The budget limited both activities,and it was recognized in increased budget requests for aides. Outreach was limited and balanced against staff ability to maintain follow-up when the budget increase was refused.

There were two follow-up studies--one in East and West County for all children with problems, and one in Central County for Medi-Cal children only. Both will be discussed because they tell a story which has relevance to national as well as local follow-up. The second had a tighter design, but was in a location which did not lend itself to a precise determination of the effects of follow-up in high density, low income areas. The studies are presented more to raise serious questions than to serve as a definitive statement of the value of follow-up.

East and West County Follow-Up

In East and West County EPSDT clinic's different follow-up techniques were tried each month of May, June, August, and October of 1975. The methods used included (1) no formal follow-up for sixty days and no health education at the clinic (2) a community health worker conducting immediate and intensive follow-up

to encourage the mothers to keep their appointments (3) health education about the problem at the clinic, but no follow-up for sixty days (4) referred Medi-Cal children to social service. Table 4.15 summarizes the results of East and West County Follow-Up Study. The surprising finding is that those children with no follow-up did just as well as those with phone and home visiting follow-up. Some of the reasons for not keeping the referral appointment given at the time of the sixty day follow-up effort were as follows:

Group 1 - May, 1975 (No Follow-Up)

1. Mother going to school. Did not want to miss her classes
2. Form says "Charles has another appointment in August...", then refers to "Virgil" who needs special food.
3. Form refers to "John" - Mother says they have not received Medi-Cal card.
4. Mother forgot appointment because she was ill.
5. Mother forgot appointment because she was ill.
6. Mother says he didn't keep appointment because they have not received Medi-Cal card.
7. Will not return due to lack of funds.
8. Will not return due to lack of funds.

Group 2 - June, 1975 (CHW Intensive Follow-Up)

1. Mother gave too many excuses, would not take child to dentist.
2. Mother would not keep appointments
3. Mother would not keep appointments
4. Did not go due to lack of funds
5. Dental/vision problems, kept vision appointment, would not see dentist
6. Mother unable to take off from work to take him to doctor
7. Phimosis-Mother refused to have him circumcised, also refused dental appointment.
8. Will not return due to lack of funds
9. Lack of funds
10. Father refused to have son circumcised
11. Family refused treatment, said child had never complained about her vision
12. Mother refused to take child for treatment. Says she has to work.

Group 3 (Health Education at Clinic Only)

1. Mother refused treatment. Says she doesn't have insurance
2. Afraid of dentist. Did not go
3. Afraid of dentist. Did not go
4. Financially unable to afford dental care
5. Financially unable to afford dental care
6. Mother said she did not know date or source of appointment. Says information was unclear.

TABLE 4.15

Results of East and West County Follow-up Study

Group	Dates of Screen & Referral	Number Referred	Percent of those referred who showed for treatment	Percent of those referred known to have completed treatment
(1) No follow-up for 60 days No intensive health education	May 1975	48	68.8%	62.5%
(2) Community Health Worker intensive follow-up	June 1975	47	61.7%	40.4%
(3) Community Health Worker gives health education at clinic; no follow-up for 60 days	October 1975	70	54.3%	41.4%
(4) Referred to social service for follow-up of Medi-Cal eligibles	August 1975	30	60.0%	36.7%

Group 3 -cont.

7. Mother said she did not know date or source of appointment. Says information was unclear.
8. Same as above
9. Same as above
10. Mother has emotional problems. Lacks motivation to keet appointments
11. Mother refused appointment, felt it wasn't necessary
12. Severe caries. Mother refused dental appointment because they are only "baby teeth"
13. Injured arm. Treated at home. Mother would not take her to doctor due to lack of funds.

Group 4 (Social Service)

1. Wouldn't let dentist pull teeth due to lack of funds
2. Mother forgot appointment. Will consider another appointment "when car works"
3. Same as above
4. Mother requested transportation
5. Same as above
6. Same as above
7. Same as above
8. Same as above
9. Mother cancelled appointment
10. No response
11. No response
12. No response

Since so many indicated that they did not go due to a lack of finances, it was decided that another study should be conducted in which only Medi-Cal eligible children would be followed. When this was discovered, the new Central County clinic in Concord was preparing to open. Since the East and West County project was winding down at this point, and because the new clinic at Concord had more space available, it was decided to conduct the "Medi-Cal only" follow-up experiment in Central County. At that time, the researchers were not aware of the high rate of treatment being received in Central County. The Central County clinic had been conducting a "paper clinic", where the parents and children were invited to come to the clinic a day or two before their scheduled screening to complete the paperwork, including permission slips and child and family histories. The "paper clinic" process had the additional beneficial effect

(aside from speeding up the actual screening process) of weeding out persons who were not likely to show for the screening clinic, and, of course, bringing in those interested in finding and treating their children's problems. As a result, the follow-up study may not be applicable beyond the situation where there exists a low-income white population--primarily working poor--such as in Central County, and where a "paper clinic" is held prior to actual screening appointments. In this case it appears that no follow-up for ninety days is as effective as intensive assistance in getting children to treatment, even with adjustments made for age and diagnostic condition. Table 4.16 depicts the groups participating in the study, the inclusive dates, and the resulting show-for-treatment rates. Children screened between the dates shown in the table were assigned to the group until sufficient numbers were accumulated in each group to allow adequate sample sizes for comparison. The paper clinics increase efficiency of clinics, but concurrently,two visits act as a care barrier. It follows that follow-up would be better, as only the more highly motivated would get through the barrier.

It appears from this study that in Central County follow-up efforts do not pay off. Those with no special follow-up effort had as good a show-for-treatment rate as did those with intensive efforts. Whereas "moved" and "no money" were the reasons stated for no show in groups 1 and 2 with minimal follow-up, "not interested" and "mother doesn't agree there is a problem" resulted when there was immediate follow-up; and the resulting follow-up rate was less than with no follow-up at all! The Community Health Workers were only able to get two out of seventeen individuals not showing in groups 1 and 2 to come to the clinic.

TABLE 4.16

Medi-Cal only - Central County
Follow-up Study Results

Follow-up Method	Dates of Screening	No. of Problems	Percentage Keeping Appointment	Reasons For No-Show
1. No referral appointment made in clinic. No follow-up. Check backlog in 90 days.	May through September 1976	60	76.7%	(8) Moved (1) Referral
2. Referral Appointment made in clinic. No follow-up. Check backlog in 90 days.	October through January 1976/ 1977	59	74.6%	(6) Moved (2) No Money (1) No Insurance (1) Refused (2) No need in Mother's opinion
3. Referral Appointment made in clinic. Immediate follow-up by Public Health Nurse (phone & home visits.	January through April 1977	60	65.0%	(4) Moved (1) Mother did not think it a problem (5) Not interested (1) No money (off Medi-Cal)
4. Follow-up of No-Shows from groups 1 & 2 after 90 days.	Same as 1 & 2 but conducted between February and April 1977	17	11.8% of those not showing increases cumulative percent of group 1&2 by 2 percentage points.	(11) Moved (2) Can't Locate (2) No Money

The conclusion from the follow-up study was that in Central County no routine follow-up efforts were necessary or even desirable prior to an elapse of ninety days. Even then, only minimal efforts at intervention should be attempted in order to convince a mother to keep an appointment after missing the first one. Ways are needed to predict who will miss an appointment, and to try alternate methods to motivate mothers (the other 20%) to take children to treatment.

Dual Screen - Use of M.D.'s versus Nurses

In this section the overall M.D. nurse comparison for the entire project is presented as an introduction to the dual screen experiment. Then the experiment is described.

Approximately 70% of the children were given the physical examination portion of the screen by nurse examiners, some of which were trained by the Contra Costa Health Department program; some were trained in other equivalent programs, and others had health department training plus six months advanced training at a university program. For each screen for a child on the record system, there was recorded a problem count, which totaled the number of referral sheets completed for that child on that screen. The following summarizes the findings when comparing the nurse and the M.D. screens overall:

				Medical Problem Count (Excluding Dental)		Problem Count for Serious Rated Medical & Dental	
	Number	Problem Count					
Examiner	Screened	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
M.D.	3475	.24	(.431)	.207	(.499)	.068	(.25)
Nurse	7246	.335	(.472)	.293	(.562)	.110	(.35)

This shows a difference of approximately 5 children in each hundred screens in terms of number of referrals. The number of problems that came back from diagnosis as being rated moderate to severe for that type of problem was 5 children more for every one hundred screened by the nurses.

The number of referrals of serious problems per screen could vary by many other factors such as age of the child, location of the screen, part of the county any of which may be correlated to the type of screener. However, a discriminate function was run in which the criterion variable was a variable indicating whether or not a child had a problem of any kind on a screen, and the independent variables included age, ethnicity, Medi-Cal status, etc. Even after controlling for the other independent variables, the nurses still reported more problems.

To get a better picture of the comparison, only Medi-Cal screens for clinic 108 (Richmond), for project year 1976 and 1977 were selected from the total screening file. The average number of problems per screen were compared for the M.D.'s, the major nurses[7], and the other nurses. Table 4.17 shows that the M.D.'s and nurses saw a slightly different age distribution of children with 44% of the children screened by the M.D.'s under age 2, and 33% of those screened by nurses under age 2. But even when age-adjusted, the nurses rate of referrals and serious cases of problems diagnosed was higher than the M.D.'s. Still, however, the children were not the same, and the problems may not have come from the physical examination part of the screen (vision, hearing, laboratory, etc. could have been some of the problems), so the concept of the dual screen was implemented.

The Central County Clinic was used because the space was large enough to accomodate the extra personnel required to insure that children were screened absolutely independently. Two hundred fifty two (252) children agreed to participate in the dual screen in which the child would get the physical exam two different times within the same clinic--one by an M.D., and one by a nurse.

The determination of who was to see the child first was made by the flip of a coin, and various M.D.'s participating were matched with the nurses participating so that each nurse would dual screen equally between M.D. screeners. A total of

[7]"Major nurses" refers to the one or two who did the most screening.

TABLE 4.17

Average Problem Count for Medi-Cal Children
Initially Screened in Project Year 1976-1977,
in Clinic 108 (Richmond)

	Doctor		Major*Nurse (Most Screens)		Other Nurses	
	Number	Mean Prob. Per Screen	Number	Mean Prob. Per Screen	Number	Mean Prob. Per Screen
Age 0 - 3 Mos.	14	0.00	13	.08	17	.12
4 - 11 Mos.	8	0.25	23	.35	11	.36
1 Year	8	.25	14	.36	28	.26
2 - 4 Years	16	.06	23	.26	51	.31
5 - 12 Years	18	.50	54	.65	30	.43
13 - 21 Years	4	0	23	.31	29	.90
Age Adjusted (to M.D.'s Age Distribution)		.2		.35		.34
% of Children Under Age 2		44%		33%		34%
For Moderate to Severe Rated Problems Referred from Diagnosis						
Age 0 - 3 Mos.	14	0	13	.08	17	0
4 - 11 Mos.	8	0	23	.04	11	.09
1 Year	8	0	14	.07	28	.18
2 - 4 Years	16	0	23	.05	51	.42
5 - 12 Years	18	.17	54	.22	30	.13
13 - 21 Years	4	0	23	.43	29	.22
Age Adjusted (to M.D.'s Age Distribution)		.045		.124		.18

*"major" refers to the nurse that screened most of the children.

252 children were screened at the Central County clinic in Concord during thirteen clinic sessions between October, 1976, and February, 1977. The nursing and physician staff cooperated very well under the direction of the on-site evaluators--Joan Fenske, DNS, and Mr. Rod Gardner. The process required the clerks to fill out two separate screening sheets with the identical pre-examination information. The on-site coordinator ensured that the order was random, and that one examiner did not see the examination results of the other. The clinic supervisor then reviewed both charts to determine what the child's needs were in terms of immunizations and referrals. There was some conflict in the immunization requests. In many cases, the PNP (Pediatric Nurse Practitioner) and M.D. would agree on which immunizations should be given, but not upon the time of such immunizations. There was some disagreement concerning polio and mumps immunizations (nurses generally leaving them out of the list of needed shots), Policies need to be reviewed in these two areas. The basic findings of the dual screens can be summarized as follows:

- No difficulties were encountered in gaining parental permission to conduct the study, so there should be no concern as to the protection of human subjects. Permissions were obtained following abrief verbal or written explanation.
- The order screened made no difference in the types of findings reported.
- The rates of problems referred were ($\frac{33}{252}$=).13 problems per screen for the M.D.'s and ($\frac{51}{252}$=).20 problems per screen for the P.N.P's. While these represent rates lower than the rates in the entire record system, Concord Clinic would be expected to have lower rates. The differential in referrals, however, is maintained.
- The rates of problems mentioned in the patient's chart were ($\frac{47}{252}$=) .18 problems per screen for M.D.'s and ($\frac{62}{252}$=) .25 problems per screen for the nurses.
- The results on the 252 children can be classified as shown in Table 4.18. If the boxed items on the table are counted as "substantial agreement", then substantial agreement existed on 88% of the children screened.

TABLE 4.18

RESULTS OF DUAL SCREENS OF 252 CHILDREN IN CENTRAL COUNTY

188 Children	- Agreed by both M.D. and P.N.P. to have no problems	74.6%
26 Children	- M.D. and P.N.P. disagreed that the child had a problem	10.3%
24 Children	- M.D. and P.N.P. agreed that the child had a problem or problems and what the problems were	9.5%
8 Children	- M.D. and P.N.P. agreed that the child had a problem and <u>some</u> agreement on exact problem but not all of the problems.	3.2%
4 Children	- M.D. and P.N.P. agreed that the child <u>had</u> a problem, but not what it was	1.6%
2 Children	- M.D. and P.N.P. agreed on the problem, but not on the referral (one case the M.D. prescribed on-site, one case nurse felt problem was already being treated)	0.8%
252		100%

*Percentages in boxes indicate agreement in substance.

- Among the 86 problems mentioned by either a doctor or a nurse among the 62 children with mention of at least one problem, 66% of the problems showed disagreement on referral, and 57% on mentioning the problem. The greatest disagreement among mentioned problems were in the age group 2-4, and 12-21.

- There was insufficient sample size to make detailed comparisons of individual doctor/nurse interactions since there were four doctors and eight nurses.

- There was no doctor/doctor dual screens, so it was difficult to say whether differences in opinion were due to the doctor differences, or to the nurses.

Since there was a high rate of agreement as to what should be done for the children involved in the study, the question arising is "What were the conditions which led to points of disagreement?" Figure 4.5 was prepared to show the results of each screen where a problem was found, either by the M.D. or by the nurse. There were four M.D.'s and eight different nurses participating in the study. Looking down the columns of Figure 4.5, it is interesting to observe the patterns of reporting of the various examiners. (Each examiner had the same vision, hearing, etc., test results available to him or her, and each would repeat the review of the child's history with the parent and would conduct the unclothed physical examination.) The M.D., coded as B, mentioned most of the reported emotional problems and referrals to Family Planning. This person was apparently more tuned-in to the behavioral/educational aspects of the children seen in the examination. However, even removing this M.D. from the comparison does not change the % disagreement among those reported to have problems, but it may be that there is as much variance between M.D.'s as there is between nurses.

Figure 4.5

LIST OF CONDITIONS FOUND IN DUAL SCREENING
and COMPARISON OF FINDINGS OF M.D. VERSUS NURSE PRACTIONER

		MD				PNP							
Child Number	Child's Age	A	B	C	D	1	2	3	4	5	6	7	8
1	5	Dental[1]				Dental[R]							
2	5			--			Dental[R1]						
3	6	Prot.in[R1] Urine						Prot.in[R] Urine					
4.	16			Derma.[R1] Nutri.			--						
5.	9	Eye turns[R] inward				--[1]							
6.	11			--				Amblyopia[R1]					
7.	16	Congest.[M] Rash					Congest.[1M] Rash						
8.	17			Vag. Oisch.		Vag.Oisch.[1R] to GYN							
9.	6		Emot. Prob.[1R] En. Liver[R]							--			
10.	5		School[R] Behavior									Dental[1R] Epistasis Sch. Prob.[M]	
11.	3		--									Overweight[1R]	
12.	1		--								Swollen[1] Ing.Nodes		
13.	8	Dental[R] Orthod.									Dental[1R] Orthod.		
14.	7				Dental[R]						Hip.[1R] Dental[R]		
15.	16	Dental[R] ENT										No Referral, Mother aware	
16.	2		--					Denver[1] Speech[R]					
17.	14	Dental[R]									--[1]		
18.	11 mo.		Cyst on[1R] Fontanel				Cyst on[R] Fontanel						
19.	9		Slightly[M] Dbese									Pain in Abdomen[R] Overweight Class[R]	
20.	2				Rx Rash[M]		--[1]						
21.	2		Emot.[R] Prob.				Chest Mal-formation[1R]						
22.	1	Recheck[M] ears										Recheck[1R] ears	
23.	6		Dental					Dental[1R]					
24.	14		ENT[1R] Dental[M]					ENT[R] Dental[R]					
25.	10		Thyroid[1R]										Thyroid[M]
26.	7				Submandibular[R] nodes; small for age							--[1] Dry Skin[M]	
27.	13	Dental[R]										Dental[1R]	
28.	16	--											Eye[R]
29.	16				Dental[R]			--					
30.	3		Dental[M]					Dental[R]					

(continued next page)

Continuation of Figure 4.5

Child Number	Child's Age	MD A	MD B	MD C	MD D	PNP 1	PNP 2	PNP 3	PNP 4	PNP 5	PNP 6	PNP 7	PNP 8
31.	10 mo.	Infec. Ear[M] Rx. Dimetapp[1]											--[1]
32.	5		Dental[M]			Dental[1R] Node-Lump[R]							
33.	18 mo.	Rx Dimetapp[M]									Severe diaper[1M] rash;gave health educ.		
34.	1 mo.	Skin Prob.[M]									Skin Prob.[1M]		
35.	4		Allergy[1R] Asthma					Allergy[M]					
36.	12				Wart[R] Vision[1R]			Wart[R]					
37.	9				Rx. Hydrocor-[M] tisone; Derma.		Dermato-[1R] logical						
38.	18			Dental Emot.[R] Nutri.									Dentist[1R] told about diet[M]
39.	3			Speech[R]								Incontinence[R] Speech	
40.	4	--										Pes Varus[R]	
41.	18		Fam. Plan.[R] & V.D. Orthopedic[R] Fam. Plan					Audio.[1R] Dental Cyst.[R]					
42.	18	Rheumatic[1R] fever not take medicine					--						
43.	4	--										Dental[1R]	
44.	3 mo.			ENT[R]							ENT[1R]		
45.	11	Pain in Knee[M]						-[1] Knee[R]					
46.	18		Dental Fracture not corr.			Dental[1R] Vision[R] Abd. Pain[R]							
47.	9		--									Rash on penis[R]	
48.	20		Alconol Emotional[R]									--[1]	
49.	2	Heart Murmur[R]					--[1]						
50.	7	Dental[1R]										Dental[R]	
51.	3		Rash[M]									Dental[1R] Derma.[R]	
52.	8		Chron. Otitis Ophthalmol.[M]				Chron. Otitis[1M] Dentist[R]						
53.	8		Dental[R]					Dental[R]					
54.	10	Dental[R]					Dental[1] Ortn.. feet[M]						
55.	4	--					Dental[R]						
56.	8		Rs. for [1R] Otitis				Ear Inf.[R]						
57.	6				--[1]								Dentist[R]
58.	7	Dental[R]						Dental[1R]					
59.	10				--[1]								Dental[R]
60.	7		Allergy[1R]				Allergy[R]						
61.	15		Counselling									Orthoped. Dentist[R]	
62.	9	Recheck[1] for Hip.										Ref. to Orthopedic. Hip[R]	

[1] Saw patient first

Figure 4.6 is included to summarize the results shown on Figure 4.5 It contains the problems referred by one examiner type that were completely missed (no mention in the chart) by the other. A review of the lists missed by each show an equal number of relatively serious and referrable problems missed on the part of both professionals. The diagnostic results were not available on most of these children at the time of the study, but the nature of most of the problems indicates that false positives would be equally likely in both cases.

It should be noted that in the normal clinic practice when dual screening was not being conducted, the nurses would check with the M.D. in all questionable areas or whenever acute care or prescriptions were needed before referring. Thus, the nurse and M.D. can confer prior to referral on problems which the nurse discovers, avoiding unnecessary over-referral while attempting to eliminate false negatives in areas such as dental problems. However, since some emotional problems, some pains, and family planning problems were reported by M.D.'s and not by any nurses, the nurses should discuss these particular cases which they missed on the dual screens in order to reduce possible false negatives in these areas when nurse examiners are being utilized. At the same time, both nurses and M.D.'s need to have some in-service education in the identification of dental problems. Dual screening could be conducted in other locations, perhaps on a smaller scale in order to determine the extent of false negatives occurring. This would be particularly appropriate immediately following a study of the types of conditions being referred . The dual screen study in Contra Costa had a positive impact on tightening immunization policies, pointing out areas of need for in-service training for both nurses and M.D.'s, in alerting examiners to particular items to watch for when interviewing the mother and patient that would be indicative of emotional problems, and in discovering techniques for identifying dental problems.

Figure 4.6

Problems Missed Completely

Doctor Referred, Not Mentioned by Nurse		Nurse Referred, Not Mentioned by Doctor	
Diagnosis	Age	Diagnosis	Age
Dermatology	(16)	Dental	(5) (5) (18) (4) (6) (15)
Nutritional	(16)	Amblyopia	(11)
Eye turns inward	(9)	Epistasis	(5)
Emotional Prob.	(6) (18)	Overweight	(3)
Enlarged liver	(6)	Swollen Ing. Nodes	(1)
Dental	(14) (16)	Hip problem	(7)
Rash (Rx)	(2)	Denver, Speech	(2)
Emotional Prob.	(2)	Chest Malformation	(2)
Infected Ear	(10 mos.)	Eye Problem	(16)
Rash	(10 mos.)	Node-Lump	(5)
Vision	(12)	Incontinence	(3)
Family Planning & V.D.	(18)	Pes Vargus	(4)
Orthopedic	(18)	Audiometric	(18)
Rheumatic Fever (not taking medicine)	(18)	Vision	(18)
Alcholism (emotional)	(20)	Abdominal Pain	(18)
Heart murmur	(2)	Rash on Penis	(9)
		Orthopedic	(15)

The implication of the study is that nurses trained as pediatric nurse examiners can effectively supplement the M.D.'s in conducting the well child examination portion of the screen--especially if occassionally there would be a dual screen of randomly selected children with special attention to referrals for dental and emotional problems. The nurses were apparently referring more dental conditions that were rated as moderate to severe upon reaching diagnosis (data from entire record system) and are missing no more problems than the M.D.'s, as indicated in the dual screen. The policy of having one M.D. at the screening site and adding nurse examiners (rather than more M.D.'s) in the large screening clinics appears to have been most appropriate.

Conditions Treated

The two and one-half page sheet in Appendix S was presented at the California State CHDP Advisory Board Meeting in early 1977, and, thus, contained results gathered through July 1976, for East and West County target areas only. They show the types and numbers of conditions found, followed up, and brought to treatment in the project. The initial paragraphs provide the data base utilized for the conditions reported in the ensuing paragraphs. This is included to show the final results of screening, diagnosis and treatment--resulting in conditions brought under care as described in the insert.

Conclusions

Over 12,000 children were given over 19,000 screens between March, 1974 and May, 1977, with a rate of referrals per screen of .30.

The only procedures which children needed but did not receive were routine uninalyses, PKU's, and tuberculosis testing, and, to some extent, vision testing. However, after a review of the rates of findings and false positives for the uninalysis, PKU, and tuberculin procedures, the need for their inclusion in the routine screening package for Contra Costa County is highly questionable.

The "retest before referral" policy of the Health Department for vision and hearing problems served to reduce the number of referrals by one-half the rate of positive findings. However, the screening-visit payment does not recognize the value of this test-retest procedure, as discussed earlier in the report. The fees encourage one-visit screening, but the retest procedure could reduce unnecessary use of more expensive treatment resources, resulting in considerable dollar savings.

Over 50% of the problems were rated by diagnosticians as moderate to severe in seriousness, and approximately 5% were found to have previously been under care.

The most serious diagnosed conditions were followed thoroughly by Public Health Nurses. The project held weekly review meetings of serious cases to be referred in order to assure that each child had a specific staff member assigned to do follow-up on his or her case, and that each staff member was allowed sufficient input to the follow-up process.

Dental problems posed the greatest difficulty for treatment completion. Only 55% of the West County Medi-Cal children showed for treatment. Although this was better than the 37% of non-Medi-Cal children showing for treatment, it was not

nearly as encouraging as the 85% of Central County Medi-Cal children showing for treatment. Innovative techniques are needed in preventive dental health education and in guaranteeing more timely treatment of dental problems found in screening.

It should be noted, however, that aside from dental and vision problems, all medical conditions requiring the services of an M.D. had nearly a 90% rate of treatment once they reached diagnosis. But only 60-70% of the medical problems reached diagnosis. The types and numbers of problems brought under treatment attest to the dedication of the project staff.

The Central County follow-up study showed that when "paper clinics" (a pre-clinic visit for completion of forms) were held, and when the population of the target area consisted mainly of children of the working poor, minimal follow-up efforts were equally as effective as more intensive, personalized follow-up. The fact that the study had such results in Central County indicates that local programs need to duplicate randomized trials of alternative follow-up methods to determine when and where intensive follow-up is warranted.

The dual screen indicated an 88% rate of agreement among M.D.s and nurses concerning children's problems and referral needs. Areas of disagreement were primarily dental and emotional problems, but one particular M.D. reported most of the emotional problems. Inservice training is needed in these two areas. With such training and with the situation where a physician is available for giving prescriptions for minor problems, nurses with experience and training in giving physical examinations appear to make excellent screeners.

Figure 4.3

Problems Found which were not False Positive
List of Problems of Children 0 to 11 Months
Based on 1,015 Screens of 704 Children on Medi-Cal

DESCRIPTION

Candida Albicans
Fungal Rash
Yeast Infection
Ear Infection
URI
Hemangioma L. Groin
(May resolve itself)
Enlarged Lymph Nodes
Obesity
Diet Counseling Needed
G6PD Absent (2)
Anemia or low hemoglobin (64)
Sickle Cell Trait (4)
Vision Problem in left eye
Myopic Astigmatism
Conjunctivitis
Naso-Lacrimal Duct Obst.
Orbit Hyperopia
Strabismus (2)
Eye Infection
Otitis Media (6)
Heart Murmur
Ventricular Septal Defect (2)
Systolic Heart Murmur
Nasal Drainage
Inf. Throat, Fever
Upper Respiratory Viral Infection
Upper Respiratory Infection (6)
Rhonchial Lungs
Allergic Erythema
Possible Milk Allergy (3)
Asthmatic Problems

Allergy
Caries (5)
Chipped Central Incisor
Oral Monilia Infection
Severe Over-Bite
Frequent Bowel Movement
Rectal Tag/Fissure
Umbilical Hernia
Phimosis (2)
Cradle Cap
Erythematous Rash (2)
Mycotic Diaper Rash
Diaper Rash (5)
Impetigo (2)
Keloids, Ear Lobes
Papular Rash
Atopic Dermatitis
Dermatitis
Rash on Cheek
Rash on Face (2)
Rash on Shoulder
Scalp Lesion
Scaly Scalp
Eczema, Seborrhea
Skin Erosion Left Ear
Ext. Rotation/Feet
Orthopedic Problems
Hip Dysplasia (3)
Pes Valgus
Retroversion Right Hip
Bilat Foreft Adduct
Metarsus Varus (2)

Polydactyly L. Toe (2)
Cephalohematoma
Failure to Thrive
Hypertrophic Pyloric Stenosis
Bony Outgrowth on Head
Chest Rales
Colic
Fever
Fused Labia
Projectile Vomiting
Breath-Holding Spells
Flea Bites
Contusions (Hematoma, front skull)
Scabies

Problems Found which were not False Positive
List of Problems of Children 1 to 4 Years
Based on 2,155 Screens of 1,767 Children on Medi-Cal

DESCRIPTION

Pediculosis Capitis (2)
Ringworm (4)
Seborrhea
Wart on Left Wrist
Pinworms
Roundworms (2)
Seborrhea Cyst (2)
Inclusion Cyst
Nodule Behind Left Ear
G6PD Minimal
Nutritional Obesity (2)
A/S HBG Type (4)
Abnormal HCT & HBG
Cervical Adenitis
HB Type AC
Anemia (2)
Nutritional Anemia (18)
Iron Def. Anemia (8)
Low Hemoglobin 65 gr diagnosis
Low Hemoglobin on screening (70)
Behavior Evaluation Needed
Family MH Therapy
Behavior Problems
Cerebral Palsey
Psychiatric Evaluation
Upset child
Delayed Speech Devel.
Speech Defect
Speech Difficulty
Speech Disorder
Speech Eval. (2)
Speech Problem (4)

Articulation of Tongue
Express True Language Prob.
Stammering Speech
Stuttering
Seizure Disorder
L. Esotropia
Esophoria
Glasses Prescr. (2)
Astigmatism (2)
Hyperopia (5)
Refractive Vision (2)
Right Eye turns in
Myopic Astigmatism
Bilateral Genus Valgum
Bilateral Exophoria
Blocked Tear Duct
Chalazion
Conjunctivitis (3)
Cycloplegia
Esotropia (2)
Internal Strabismus
Strabismus (5)
Cataract Right Eye
Left External Otitis
Calcified Plaque RTM
Dull Ear Drum
Otitis Media (3)
Extra Auric Appendage
Water Behind Ear Drum
Bilateral Hearing Loss
Myringitis
URI (20)

Cerumen impacted (3)
Hearing Defect
Eustachian Insuf.
Cardiac Evaluation (4)
Enlarged Heart
Heart Condition
Pulmonic Stenosis
Irregular Heart Beat (2)
Systolic Heart Murmur (2)
Innocent Murmur
Cough, Nasal Drainage (3)
Flu
Enlarged Tonsils
Bronchitis (2)
Otitis & Pharangitis
Mild Tonsilitis
Tonsilitis (2)
Strep Pharyngitis
Pharyngitis
Chronic Adenoiditis
Boggy Turbinates
Rhinitis
Throat Infection
Allergic Rhinitis (3)
Asthma
Dental Caries (186)
Fill, Cap Incisors
Teeth Abcessed
Maloclussion
Dental Prophylaxis (9)
Rampant Dental Decay
Cross-Bite

Orthodontic Problem
Overbite
Gingivostomatitis
Teeth Crowned
Constipation
Loose Stools
Diarrhea-Vomiting
Meatal Stenosis-Anus
Hernia (2)
Left Inguinal Hernia
Umbilical Hernia (4)
Infected Bladder
Urinary Tract Infection
Hydrocele (2)
Needs Circumcision
Infection around Penis
Phimosis (14)
Mild Meatal Stenosis
Irritated Penile Cord
Vaginal Inflammation
Yeast Infection - Labia
Cradle Cap Crown
Diaper Rash
Asteatosis
Eczema (7)
Lesion under Nose
Miliaria
Mole
Eczema Lichen Sninulosis
Fungal Ulcer
Raised White Lesion - leg
Rash (5)

Gamp Rash
Atopic Dermatitis (2)
Tinea Corporis
Fungal Infection (2)
Seborrheic
Skin Infection
Skin Lesions
Allergic Rash
Ulcer on Finger
Vesicular Rash
Pes Planus
Anteversion Hips
Edema-L Extremities
Tibial Torsion (15)
Flat Feet
Genu Valgum, Bilateral
Genu Valgus (68)
Orthopedic Shoes Needed (2)
Genu Varum (2)
Foot Deformity
Anteversion Hip Bilateral
Tongue Tied
Feet Turned In
Metatarsus Adductus
Pes Varus
Pes Varus Metatarus
Undescended Testicle
Papular Lesions
Asthma
Enuresis
Polyuria
Bruise on Buttock

Cut Left Foot, Left Arm
Child Abuse
Removed Foreign Body from Ear (5)
Bird Seed in Ear
Foreign Body in Foot (2)
Abnormal Height & Weight (2)
Child Needs Home Eva.
Child Needs Therapy
Poor Muscle Tone
Possible Child Neglect
Slow Development
Low in Denver Developmental Screening Test

Problems Found which were not False Positive
List of Problems of Children 5-11 Years
Based on 1,867 Screens of 837 Children on Medi-Cal

DESCRIPTION

Head Lice (3)
Horny Wart on Neck
Wart (7)
Hemangioma
WBC 11.4 Pos. Infection (2)
Pinworms (2)
Keloids on Ear
G6PD Absent
G6PD Minimal (3)
Low Hemoglobin (27)
Nutr. Anemia (3)
Anemia (8)
Iron Insufficient (2)
Learning Disability
Emotion. Academic Lag
Behavioral Problem
Emotional Problem
Character Neurosis
Hyperactive (2)
Learning Problem
Childhood Adj Reaction
Prob. Emot. Disorder (Nighttime Screaming)
School Emotional Problem
Hyperkinetic Reactions
Very Restless
Slow Speech Devel.
Speech Disorder
Epilepsy (History of)
Petit Mal Seizures
Clonus
Astigmatism, Strabism
Myopia, Astigmatism

Refractive Problem
Myopia (5)
Mild Hyperopia (2)
Refractive Error (9)
Corneal Scar
Esotropia (2)
Slight Astigmatism
Overactive Oblique Movements in eye
Hyperopia
Blepharitis Left Eye
Conjunctivitis
Strabismus (4)
Abnormal Hearing Test
Mild Ear Infection
Serous Otitis Media (3)
External Otitis Media (2)
Otitis Media (6)
Foreign Object in Left Ear
Cerumen Impaction (2)
Hearing Loss (4)
Innocent Murmur (5)
Heart Murmur (2)
Ventrical Septal Dft.
Adenoid Problem
Hay Fever Syndrome
Cough, Nasal Drainage
Tonsilitis (3)
History of Frequent URI
Mouth Breather
Rhinitis
Throat Infection
Allergic Rhinitis (3)
Recurrent Tonsillitis

URI (2)
Nasal Congestion
Asthmatic Bronchitis
Asthma (2)
Intermit.Rhonchi, Dys.
Dental Caries (231)
Overjet, Crowded Incisors
Prophylaxis, Fluoride Appl. (7)
Orthodontic Referral
Gum Boil
Crowding of Teeth
Severe Open Bite
Severe Crowding
Overbite (2)
Malocclusion
Anterior Overbite (2)
Protruding Teeth
Umbilical Hernia (2)
Albumin in Urine
Urethral Anastomosis
Meatal Stenosis
Urine ph-7
Phimosis (2)
Hydrocyle Hernia
Varicoscele of Teste
Varicoscele Scrotum
Hormonal Effect
Atopic Dermatitis
Contact Dermatitis (2)
Scabies
Rash (3)
Dry Atopic Eczema
Eczema

Hyperpigmentation
Impetigo (2)
Congenital Dry Area
Lesions Face and Neck
Paronychia
Allergic Rash
Moles on Buttock
Pityriasis Alba
Hip Rotation
Internal Tibial Tors
Sl. Genu Valgum
Hyperextension Knee
Toes Inward
Osteomyelitis
Rotation in Right Hip
Anteversion-Fem Neck
Tibial Torsion (3)
Chest Assymetry
Hypospadias
Left Shoulder Deformity
Webbed Foot
Congenital Toe Deformity
Undescended right Testicle (3)
Tension Fatigue
Neurological Abnormal (Dizzy Spells)
Dry Brittle Hair
Encopresis (2)
Frequent BM's in Pants
Chronic Sinusitis
Hay Fever
Scalp Infection
Knee Pain for 5 Years
Nose Bleeds Epistaxis (2)

R/D Bone Pathology
Enlarged Tonsils
Enuresis (6)
Urinary Infection
Foreign Body in Right Ear (6)
Right Thumb does not extend
Short Stature
Unusual Growth Pattern
Denver Developmental (2)

Problems Found Which were not False Positive

List of Problems of Children 9 to 12 Years
Based on 852 Screens of 785 Children on Medi-Cal

DESCRIPTION

Dermatophytosis
Parasites
Tinia Capitis
Scabies
Wart (5)
WBC 11.2 Possible Infection
Pinworms
Growth on Heel
G6PD Absent
Poor Diet History
Obesity (7)
A/A Hemoglobin Type
A/C Hemoglobin Type
A/S HB Type (3)
Low Hemoglobin (13)
Anemia (4)
Nutritional Anemia (3)
Iron Defficiency Anemia (3)
Behavior Problem
Discipline Problem
Emotional Problems (2)
Soc-Emo Adj. Problem
Hyperactivity
Emotional Problem (Nervous)
Astigmatism (3)
Hyperopic Astigmatis
Amblyopia
Decreased Vision
Double Vision
Myopia (5)
Mild Hyperopia
Bilat. Myopic Astig.
-fractive Vision
-eropia

Allergic Conjunctivitis
Esotropic Astigmatism
Replacement of Glasses
Refractive Vision (2D)
Blepharitis (2)
Anisometropia
Myopic Astigmatism
Bilateral Strabismus (2)
Eye Infection
Conjunctivitis (2)
Ptosis Left Eye Ltd (2)
Abnormal Hearing Test (2)
Otitis Media (6)
Serous Otitis (2)
Infl. Polyp Left Ear
Chronic Serous Otitis Media
Retracted Ear Drums
Impacted Cerum (3)
Hearing Loss (5)
Innocent Murmur
Heart Murmur (2)
Hypo-Thyroid
High Blood Pressure
Innocent Murmur
Needs Tonsillectomy
Enlarged Tonsils (3)
Infected Throat
Laryngitis for 1 year
Nasal Allergy
Infected Tonsil
Allergic Rhinitis
Hayfever
URI (2)
Allergic Rhinitis (3)

Allergy
Asthma (3)
Allergic Rhinitis
Rash
Dental Caries (191)
Cross Bite (2)
Severe Dental Fluorosis
Broken Teeth
Prophylaxis, Dental (7)
Loose Tooth, Hygiene
Impacted Teeth
Malalignment Teeth
Malocclusion (4)
Orthodontic Eval. (2)
Maxillary Protrusion
Overbite, Prophylaxis
Filling Replaced
Crowded Lower Teeth
Constipation
Umbilical Hernia (2)
History of Urinary Infection
Phimosis (2)
Undescended Testicle
Vaginitis (2)
Cafe Au Lait Shoulder
Atopic Dermatitis
Dry Skin
Neck Lesions
Facial Spots
Allergic Rash
Lesions on Head
Bacterial Infection on Skin
Tinea Corpus
Strain Legs

Ortho. Eval. for Gait and Feet
Hereditary Deformity, Foot
Flat Arches
Osgood-Schlatters Disease
Fx. L. Metatarsal
Strain Both Knees
Tender Scapula
Tibial Tors Swelling
Toes In
Mult. Pigmented Nevi
Genital Defect
Left Retractive Testis
Proteinuria (2)
Abnormal UA-Possible Inf.
Urine Problem (3)
Emotional Immature
Epistaxis (2)
Frequent Headaches & Stomach Ache
Headache (2)
Tendonitis
Knee Pain
Strain, Left Foot, Ankle
Pain in Abdomen
Contact Dermatitis
Urine 3+ Albumin
Prob. Emotional Problem
Enuresis (2)
Urinary Infection & therefore Incontinence
Foreign Body - Pectoralis
Removed Foreign Body - Ear
Glass in Foot
Injury to Nose
Insect Bites

Genetic Smallness
Request Family Planning
Short Stature (2)
Leg and Hip Problems

Problems Found which were not False Positive
List of Problems of Children 13 and Over
Based on 775 Screens of 721 Children on Medi-Cal

DESCRIPTION

Athlete's Foot
Influenza
Pubic Pediculosis
Seborrhea
Wart (5)
Fibroma Left Elbow
WBC Poss. Infection (2)
Bartholin Cyst
Mass Right Breast
Ganglion, Metacarpal (2)
Enlarged Thyroid
Overweight (2)
Exogenous Obesity
Obesity (7)
Low Hemoglobin (12)
A/S Hemoglobin Type (2)
HB A/C
Nutritional Anemia (2)
Anemia
School, Behavior Problem
Epilepsy
Esotropia
Prosthetic Eye Cleaned
Myopia (4)
Retina Problem
Needs Glasses
Astigmatism
Poor Vision/Refractive Error (10)
Myopia, Astignatism
Micrometropia Amblyopia
Far Sighted
Exotropia (3)
Mild Hyperopia
Blepharitis

Monosyn Patch, Left Eye
Strabismus Surgery Required
Abnormal Audiogram
Otitis Media - Chronic
Granulation Tissue
Impacted Wax in Ear
Otitis Media (2)
Pain in Ear Drum
Perforated Ear Drum
Congenital Hearing Loss
Hearing Loss (2)
Arrhythmia
Heart Murmur (2)
Hypertension (4)
Obesity
Functional Murmur
Systolic Heart Murmur (3)
Rhinitis
Inf. Throat
Tonsils Edematous
Hay Fever
URI
Bronchitis Chronic
Allergic Rhinitis
Prophylaxis (3)
Dental Caries
Severe Dental Fluorosis (2)
Chipped Tooth (4)
Orthodontic Problem (4)
Lost Front Tooth
Mottling of Teeth
Overbite (2)
2 Molars Same Place
Draining Sinus

Liver Tenderness
Burning Urination
Para Muscle Spasm
Cystitis Vaginitis
Trichomoniasis
Urethritis
Heavy Menstrual Period
Irr. Uterine Bleeding
Hormonal Imbalance, Irregular Mens.
Irregular Menses (2)
Mass, Left Breast
Menstrual Cramps
Pap Smear
No Menses, Neg. PG Test
Oysmenorrhea
Thick Vaginal Dis.
Vaginal Discharge (2)
Acne Vulgaris (8)
Pro Psoriasis
Atopic Exczema
Prob.Allergy to Metal
Rash on Right Upper Chest
Dariers Disease
Acne, Seborrhea
Cervical Spasm
Min. Scoliosis
Feet turn outward
Bilateral Patella Sublux
Scoliosis (2)
Tight Hamstring
Congenital Hammer Toes
Cartilage Hypertrophy
Proteinuria
C/O Right Shoulder Pain

Cephalgia
Chest Pains
Difficulty Swallowing
Epilepsy
Headaches (3)
Cephalgia
Strabismus
Arthralgias
Back Strain
Pain in Umbilicus
Pain on Right Side
RLQ Pain
Enuresis - at age 15 (3)
Foreign Body in Ear
Head Injury
Infected Burn
Malunion L.
Birth Control Needed (2)
Genetic Small Stature
Atopic Dermatitis

CHAPTER 5

FACTORS AFFECTING THE RATES OF REFERRALS

The differences in rates of referrals by ethnicity, part of the County, periodicity, previous utilization, etc. will be presented in this chapter. A long time interest of HSRI staff has been to attempt to find factors that could help predict which children or groups of children would have high rates of referral, and, therefore, if funding cutbacks were to occur, determinations could be made concerning those children or families who should be targeted for specialized outreach procedures.

Many variables may interact to affect the rates of referrals including ethnicity, area of the county, year into the project (learning takes place about false positives, etc.) age of the child, periodicity, examiner type, previous utilization in the twelve months prior to screening and of other health care services, immunization status, family structure, and season of the year. Whenever the rates of referrals for any one of these variables is presented (as will be presented in this chapter), it must be realized that other correlated variables may be influencing the differential rates of problems and mask the true effect of any one variable. Many explanatory factors are correlated with each other (e.g., Medi-Cal eligibility and part of the country). To deal with some of this difficulty, the technique of discriminate function analysis was used.

Discriminate Analysis

Each child was scored as either having a referred problem (one or more) or having no problems referred. Then a discriminate function was run to determine the relative influence of each independent variable (many of which were coded as "1" when the variable was present in the screen for the child, and "0" when not present. This function and the results will be presented first; then will follow data analysis by only one variable at a time.

Table 5.1 presents the function. A great deal of information is presented there, so each of the 13 columns will be described. Column 1 shows the name of the variable as used in the computer statistical package. Column 2 provides a brief description of the variable when appropriate. Column 3 shows the average for each variable. When the variable is entered as a dummy variable (i.e., zeros and ones), the mean represents the percent of cases having that characteristic. For example, 43% of the screens were for black children, 34.% were in age group 5 (5-12 years of age), 76% were original screens, and there was an average of 3.03 children in the home with a standard deviation--shown in Column 4 of 1.63. Column 5 shows the univariate F statistic which describes the extent to which that variable is different for those children with and those without problems. However, the independent effect of that variable, controlling for others, is not reflected in this figure. We are looking for an F greater than 1.00 to ensure that the variable is statistically different for each group (problems versus no problems). Column 6 contains the F to ENTER for the first equation. On Equation 1, the bottom third of the variables on the list were not allowed to enter the equation. The F to enter reflects the additional differentiating power of that variable after those variables with higher F have already been considered. Column 7 has the unstandardized coefficients, which together with the constant would give a prediction formula for those with problems and those without. In order to utilize the coefficients, first select a variable with an F to enter greater than one, then look at the sign of the coefficient and the sign of the centroids (shown at the bottom of the table). Note that in equation one, a positive centroid value indicates no problem, whereas a negative centroid indicates that at least one problem was found at screen. Therefore, a negative coefficient in Column 7 indicates that when that variable is present, there is

TABLE 5.1

Discriminant Function for Determining Factors Affecting Whether or not a Child Would Have Problems Referred at a Screen in East and West County Target Areas Only

1	2	3	4	5	EQUATION 1 6	7	8	9	EQUATION 2 10	11	12	13
Variable in Computer	Description	TOTAL MEAN	TOTAL SD	UNIVARIATE F	F TO ENTER	UNST COEF	STAN COEF	RANK OF IMPORTANCE	F ENTER	UNST COEF	STAN COEF	RANK IMPORTANCE
CONSTANT						2.35				2.05		
WHITE		.24	.43	134.6	52.9	.71	.30	5	107.8	.64	.27	5
BLACK		.43	.50	120.9								
MEX AM		.30	.46	.3								
ORIENTAL		.01	.10	1.3	3.8	.71	.07	17.5	3.1	.58	.06	24.5
OTHER ETHNICITY		.01	.10	1.9	2.6	.60	.06	20				
PY 74	Project Year 1974	.10	.30	.0								
PY 75	Project Year 1975 July 1 - June 30	.48	.50	28.1	3.8	-.27	-.14	11	8.7	-.42	-.21	10
PY 76	July 1, 1976 - June 30, 1977	.41	.49	30.3	56.1	-.90	-.45	3	43.3	-1.08	-.53	1
AGE 1	(0-3 mo)	.07	.25	106.8	20.6	.63	.16	10	85.0	1.06	.26	6
AGE 2	(4-11 mo)	.09	.28	52.2					48.0	.42	.12	15
AGE 3	1 year(12-23 mo)	.09	.28	15.8	6.2	-.46	-.13	12				
AGE 4	2-4	.25	.44	4.7	51.8	-.83	-.36	4	4.4	-.31	-.13	13.5
AGE 5	(5-12)	.34	.47	122.3	130.2	-1.70	-.80	1	33.1	-.99	-.46	2
AGE 6	(13-21)	.17	.37	16.7	87.6	-1.61	-.60	2	35.7	-.91	-.34	3
AREA 1	Target East	.38	.49	139.9								
AREA 2	Target West	.62	.49	139.9	139.9	-.55	-.27	6	23.8	-.45	-.22	9
ORIGINAL PERIODIC		.76	.42	3.2	6.0	-.24	-.10	13	7.9	-.31	-.13	13.5
		.23	.42	3.2								
STFPH 1	(Physical done by M.D.)	.27	.44	47.9								
STFPH 5	(Physical done by R.N.)	.00	.05	.5								
STFPH 6	(Physical done by PHN)	.00	.05	1.6								
STFPH 8	(Physical done by Nurse Practitioner)	.70	.47	58.7	42.1	-.56	-.25	8	40.8	-.53	-.24	8
MEDICAL	(Medi-Cal)	.36	.48	79.5	24.4	-.40	-.19	9	42.4	-.40	-.19	11
CHHD12	Prev Hearing	.10	.29	19.1								
CHHD13	Prev Vision	.11	.32	24.4								
CHHD14	Prev Lab	.06	.24	1.5								
CHHD15	Prev Physical	.22	.42	4.3	2.8	.16	.07	17.5	5.0	.21	.09	17
CHHD16	Prev Sch Phys	.03	.16	1.0								
CHHD17	12 Mon Well Care	.36	1.12	29.7	5.1	.07	.08	14.5	8.9	.07	.08	18
CHHD18	12 Mon Pvt MD	.93	1.91	8.8								
CHHD19	12 Mon OP	.18	.87	1.7								
CHHD20	12 Mon Emer	.14	.54	3.0					2.4	-.10	-.06	24
CHHD21	12 Mon Dent	.38	1.21	12.5	37.6	.22	.26	7	27.5	.20	.25	7
CHHD22	12 Mon Eye	.04	.25	.5								
CHHD23	12 Mon Other	.03	.52	1.1								
CHHD24	12 Mon Screen	.01	.12	4.9	3.4	-.63	-.07	17.5	3.6	-.57	-.07	20
CHHD25	12 Mon Hosp	.06	.35	2.8	3.8	-.22	-.07	17.5	4.4	-.22	-.07	20
NEED OPT	(Needed OPT imm when came to clinic)	.22	.45	10.9	4.5	-.17	-.08	14.5	3.3	-.15	-.07	20
MALE		.49	.50	1.2								
FEMALE		.44	.50	.4								
CARTK1	Moth & Fath Caretaker	.09	.28	.4					2.4	-.19	-.06	24.5
CARTK2	Mother	.83	.37	.5								
CARTK3	Father	.02	.14	.0								
CARTK4	Grandparent	.01	.09	1.2								
CARTK5	Sibling	.00	.03	1.0					3.9	1.92	-.06	24.5
CARTK6	Relative	.00	.07	.0								
CARTK7	Non Rel	.00	.05	2.4								
CARTK8	Self	.01	.11	6.7								
CHECKED IMM RECORD		.39	.49	27.3								
FALL		.21	.41	12.1								
WINTER		.24	.43	.5					6.6	-.25	-.11	16
SPRING		.31	.46	24.0					28.0	-.61	-.28	4
SUMMER		.24	.43	1.6								
STFHR1	Hearing test performed by M.D.	.00	.06	5.8								
STFHR5	Hearing test performed by R.N.	.31	.46	.6								
STFHR6	Hearing test performed by Lab Tech	.21	.41	178.6					178.6	-.34	-.14	12
STFHR8	Hearing test performed by Nurse Practioner	.03	.18	.0					3.0	-.34	-.06	24.5
FAMOD7	# in home	4.60	1.86	40.5								
FAMOD8	# under 21	3.03	1.63	63.2					7.9	-.06	-.10	16
FAMOD9	Age of head of household	32.21	9.39	16.3								
FAMO10	Age of Health Decision Maker	32.20	9.40	16.1								
FAMO12	Hist of Fam Health Problems	1.90	.30	11.1								
TMHREA	Years living in the county	9.07	10.10	9.5					2.7	.20	.06	24.5

Excluded from Equation 1.

CAN. CORR .311
CHI SQ. 680.25
DF 20
P Value < 0.009

CENTROIDS:
NO PROB .21
SOME PROB -.46

GROUP COUNTS:
NO PROB 4565
SOME PROB 2133

CAN. CORR .329
CHI SQ. 766.48
DF 28
P Value < 0.009

CENTROIDS:
NO PROB .23
SOME PROB -.48

GROUP COUNTS:
NO PROB 4565
SOME PROB 2133

more likely to be a problem; or, if the variable is a continuous measurement (such as age of health decision-maker) the higher the value of the independent variable, the more likely to be a problem.

For example, the factor age is represented by six different variables (each coded as ones or zero). Age groups 3 to 6 all had negative signs and age group 1 had a positive sign and age 2 was removed. This indicates that older children were more likely to have a problem than the younger age group. Age group 2 (4-11 months of age) was more likely to have a problem than age group 1 (0-3 months) which had a positive coefficient.

Column 8 contains the standardized coefficients, which indicate the relative importance of that variable in distinguishing children with and without problems. The higher the absolute value of this number, the more important the variable in distinguishing children.

Column 9 shows the ranking of the importance of each variable based on the unstandardized coefficient and the F to Enter.

Columns 10-12 represent items already discussed for a second discriminate run wherein additional variables were allowed to enter the equation.

The Findings of the discriminate analysis are as follows:

- The most important distinguishing factor is age, with the younger children showing fewer problems per screen. As shown in Chapter 4, the older children have more total problems (including dental), even If combined results of several screens are counted for children under one year of age.
- Differences in reported referrals occurred between project years*

*This statement is true, even after considering other variables and controlling for their independent effect.

with a greater proportion of children screened getting referred in the last project year. This was probably due to the increased attention to reporting referrals to the data system and to increased sensitivity to the types of problems that can be found in screening.

- White children had a significantly lower probability of referral regardless of the age group, part of the county, etc.
- The data presented in the discriminant function is only for East and West County, but the children in West County had more referrals per child screened.
- Those children reporting a visit to the dentist in the previous twelve months were less likely to have problems. Note that 38% of the children screened had previously been to the dentist at the time of the original screen. This finding would make sense because those having been to the dentist, other things equal, are probably more preventive in attitude and less likely to have dental problems since they were probably treated at the previous dental visits. Since 48% of the referrals were for dental, the prior visits to the dentist became an indicator of need for screening when considering total referrals.
- Nurse practitioners were more likely to make referrals than the M.D.'s in the children they screened. Nurse practitioners screened 70% of the children, and consulted with the on-site physician when necessary prior to referral. Due to this difference, a dual screen was conducted by nurse practitioners and M.D.'s as reported in Chapter 4. The major difference was that the nurses were more likely to refer dental problems, and a high percent of these problems returned from diagnosis by dentists were rated moderate to severe.

- Other things equal, children on Medi-Cal were more likely to be referred. As shown in Chapter 4, Medi-Cal children had more positive findings and, given a positive finding in the dental area, were more likely to be referred for a condition.
- After controlling for other variables, the difference between the original and periodic screens still was present, but was not as different as might be expected. There appeared to be fewer referrals on periodic screens; however, as will be described later in the chapter, children who were healthier on the original screens tended to be the ones who returned for the periodic screen. Therefore, unless only those persons with multiple screens are included in the data set, the original and periodic screen comparison is not meaningful in a policy way.
- There were more referrals per child in the springtime, but no reasons could be found to explain the result.

The following are relationships that show up in the screening data of the discriminate function, but are relatively weak relationships:

- Children having been in the hospital or having a screen in the previous year had greater likelihood of referral.
- Children having been seen in the well child clinics (they were younger children) had fewer problems.
- The more children under age 12 in the family, the more likely the child was to have a referral.
- When the child's caretaker is described as mother and father or sibling, there are likely to be more problems, other things equal.
- The presence of family health problems meant that the child was more likely to have a problem.

Referrals According to Age, Ethnicity, and Area of the County

The age and ethnic relationships to the rate of referrals per screen are illustrated in Figures 5.1 to 5.3. The dependent variable is the referrals per 100 screens. This is computed by dividing the total referrals by the total screens, and multiplying 100. A value of 20 does not mean that 20% of the children had a problem. It means that if one multiplied the each 100 screens by the value, the result would be the total number of referrals. On Figure 5.1 it can be seen that, regardless of ethnicity, there are more total problems referred per screen in the 5-11 and 12-21 year old group, but that 5-11 year old White children only have slightly more referrals than the 0-4 year old Black children. In fact, with respect to medical problems, 0-4 year old Black children had more problems than 5-21 year old White children. In some respects, the ethnic group reflects the part of the county. However, West County has all three ethnicities. In all age groups, the White children had lower rates of referral; whereas for all screens, the order by the most problems is always Black with the highest, Mexican American, and then White. In the target area of West County, the Mexican American children were very similar to the Black children in the rate of findings, with the 5-11 year old Mexican Americans having more referrals per screen than the Black children of the same age.

When Figures 5.2 and 5.3 are compared, it can be seen that 5-21 year old Mexican American children in East County have less problems than those in West County. The Medi-Cal results for total referrals are compared to the total referred rate for non-Medi-Cal children in Figure 5.4. In that figure, it can be seen that Mexican American children have similar results regardless of Medi-Cal status, but that non-Medi-Cal Black and White children have a considerably lower referral rate.

FIGURE 5.1 REFERRALS PER 100 SCREENS BY AGE AND ETHNICITY
ALL SCREENS IN THE ENTIRE COUNTY

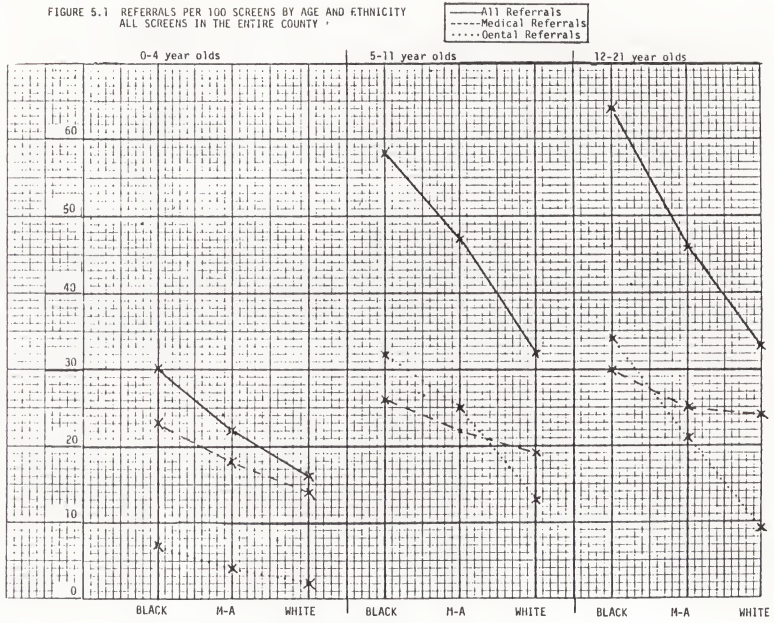


FIGURE 5.2 REFERRALS PER 100 SCREENS BY AGE AND ETHNICITY
SCREENS IN PROJECT AREA OF THE WEST PART OF THE COUNTY

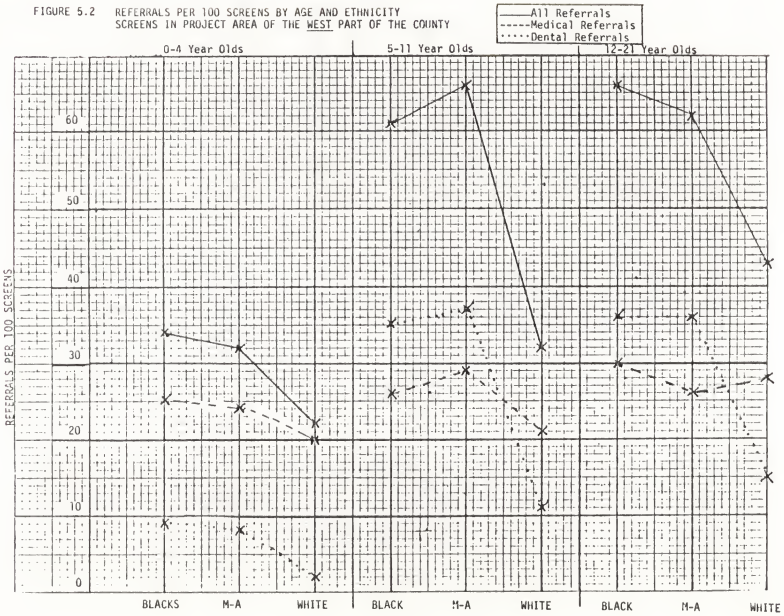


FIGURE 5.3 REFERRALS PER 100 SCREENS BY AGE AND ETHNICITY
SCREENS IN PROJECT AREA OF THE EAST PART OF THE COUNTY

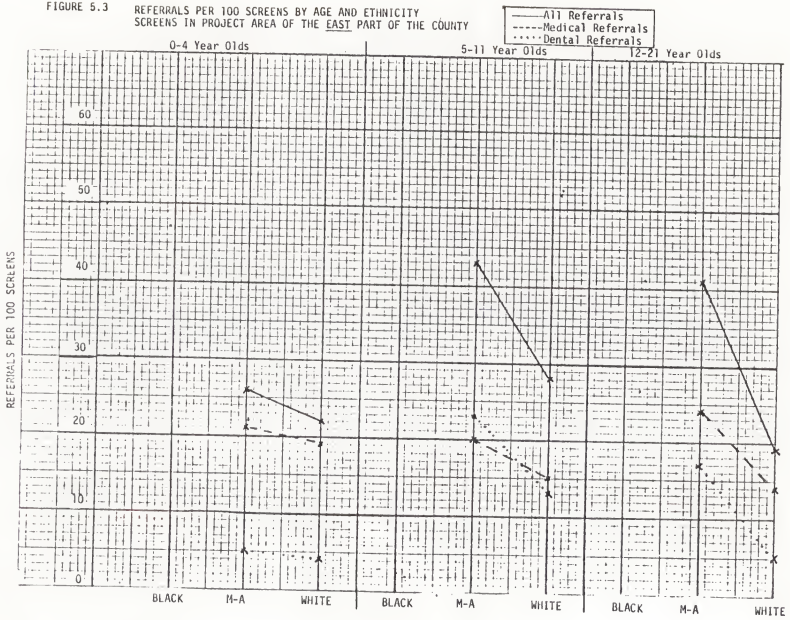
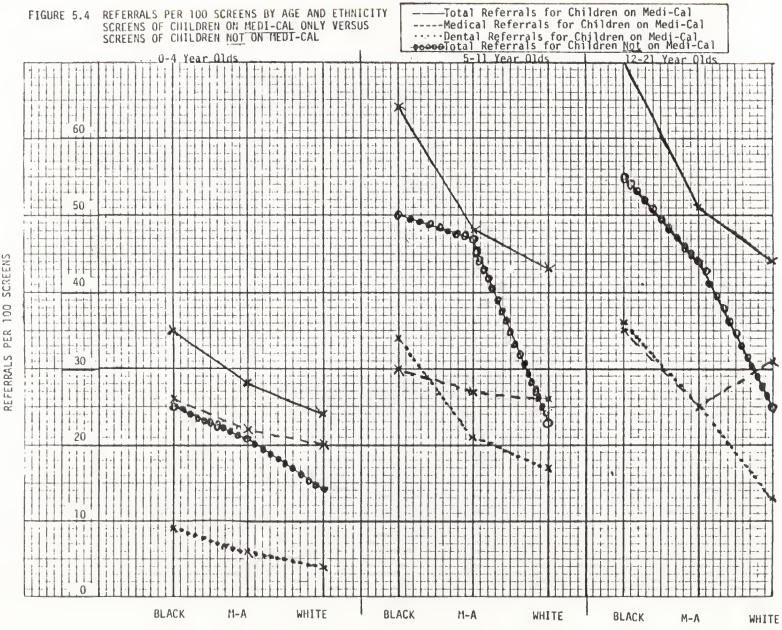


FIGURE 5.4 REFERRALS PER 100 SCREENS BY AGE AND ETHNICITY
SCREENS OF CHILDREN ON MEDI-CAL ONLY VERSUS
SCREENS OF CHILDREN NOT ON MEDI-CAL



If the purpose were to maximize referrals within a dollar budget in Contra Costa County, all Medi-Cal children (especially Black Medi-Cal children), should get first priority; then Mexican American children, regardless of Medi-Cal status, and finally non-Medi-Cal White children should have lowest priority. However, if the purpose is to maximize problems completing treatment within a limited budget, the priorities are blurred due to the low dental treatment rate in West and East Counties.

Relation of Referral Rate to Previous Health Care

Figure 5.5 shows graphically, the relationship between previous care and the average number of problems per screen. It appears that whether or not the child saw a health person in the previous twelve months had little impact on the rate of findings given all of the other variables affecting the rates of referral. A further specification of this table is presented in Table 5.2.

As discussed in Chapter 4, a seriousness rating (on a scale from 1 to 5 for mild to sèvere) was assigned by the diagnostician when referral problems reached diagnosis. As can be seen on Table 5.2, the rate of severe (rated 4 or 5) referrals per 100 screens (severe referrals ÷ hundreds screened) was very similar, regardless of the utilization of health care in the previous year.

Table 5.3 was prepared to show, in greater detail, that the only condition affected by the previous care variable was dental caries. As pointed out earlier, with the use of the discriminate function, a previous visit to the dentist meant reduced referrals in general.

The conclusion of the foregoing charts concerning levels of previous care show that parent-reported utilization of health care services cannot be used to distinguish (except for dental) the number and severity of conditions that will be found in a child population.

The next consideration is of the effect of periodicity on the rate of referrals and on healthiness.

FIGURE 5.5

Rate of Referrals Per 100 Screens
by Level of Previous Care
(Based on Original Screens March 1974-May 1977)
in all of Contra Costa County

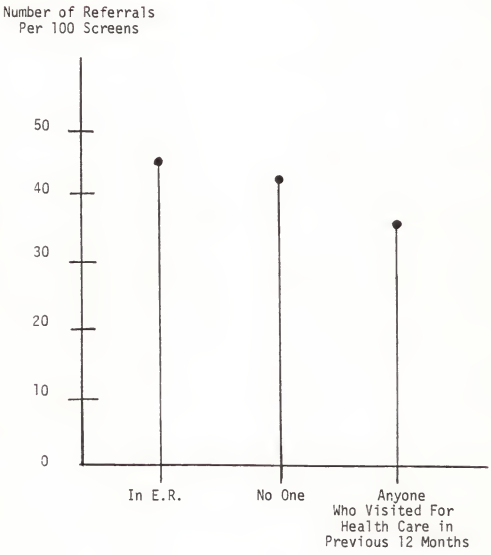


TABLE 5.2

Rate of Screen Referrals According to Previous
Utilization of Medical Referrals

(Based on Original Screens for Children with a Child History in Contra Costa County)
March 1974 - May 1977

Status in 12 Months Prior to Screen	Number Screened	Number Problems	Problem per 100 Screened	Mild/Moderate Problems per 100 Screens Number & (Rate)	# Severe Problems per 100 Screens No. & (Rate)	# No Rating per 100 Screens No. & (Rate)
Saw Anyone	7,471	2,523	34	1,009 (14)	213 (03)	1,301 (17)
Saw No One	3,947	1,617	41	555 (14)	148 (04)	914 (23)
Private M.D.	4,108	1,361	33	537 (13)	119 (03)	705 (17)
Not See Private M.D.	7,310	2,779	38	1,027 (14)	242 (03)	1,510 (21)
In Emergency Room	1,133	498	44	196 (17)	37 (03)	265 (23)
NOT in Emergency Room	10,285	3,642	35	1,368 (13)	324 (03)	1,950 (19)
Saw Dentist	1,619	548	34	199 (12)	43 (03)	306 (19)
NOT see Dentist	9,799	3,592	37	1,365 (14)	318 (03)	1,909 (19)

TABLE 5.3

Percent of Children Referred for Specific Most Frequent Problem Categories as Related to the Previous Health Experience

(Based on original screens of children with a child history present.)

	Health Utilization Last 12 Months Prior to Screen					
	Saw Health Practitioner		Saw Private MD		In Emergency Room	
Number Screened	Yes 7,471	No 3,947	Yes 4,108	No 7,310	Yes 1,133	No 10,285
Percent Occurrence						
Infective	1.1%	1.1%	0.9%	1.2%	1.4%	1.0%
Anemia	5.3%	4.7%	5.3%	5.0%	6.6%	5.0%
Vision	1.9%	1.8%	1.6%	2.0%	3.0%	1.8%
Eye	0.9%	1.2%	0.8%	1.1%	0.8%	1.0%
Ear	1.5%	1.3%	1.7%	1.4%	2.3%	1.4%
Upper Resp.	1.0%	1.0%	0.9%	1.0%	0.8%	1.0%
Caries	9.0%	14.7%	9.0%	12.1%	12.3%	10.8%
Other Dental	3.0%	4.3%	2.6%	3.9%	3.6%	3.4%
Dermatosis	1.5%	1.6%	1.4%	1.6%	1.3%	1.6%
Orthopedic	1.4%	1.3%	1.5%	1.3%	1.8%	1.3%

Original Versus Periodic Screens

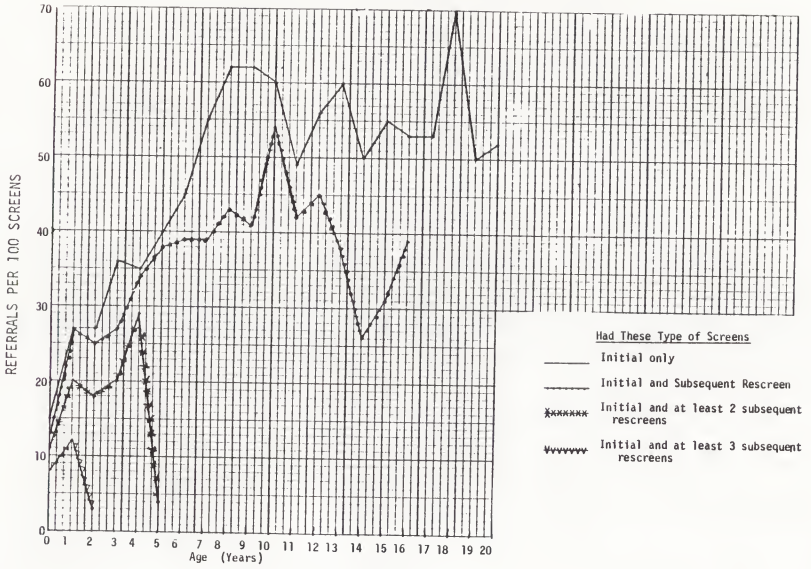
The discriminate function did show that original screens had only a slightly higher rate of referrals than periodic screens; however, there has been a great deal of interest in the extent of periodic screening necessary.

An unusual capability to look across screens for the same children was possible through work done at HSRI in building the data base and creating a special file for looking across creeens in an attempt to investigate the results of periodic screening. The need for such a file can be shown by comparing the referrals per 100 screens for those who had only one screen, and those returning for more visits.

The initial screens performed in Contra Costa County (during all four years of the demonstration project) were divided into two groups. The first group was composed of all initial screens of children who never received any further screens from the project. The second group was composed of all initial screens of children who subsequently returned for one or more rescreens. The average number of referrals from initial screens was quite different for the two groups with an average of 42 referrals per 100 screens for the group of 7,384 children who received no subsequent screens and 25 referrals per 100 screens for the group of 4,413 children subsequently returned for one or more rescreens.

In part, this finding is related to the fact that the younger children who have fewer referrals per screen (see Figure 5.6) were also more likely to return for a rescreen (in compliance with the suggested periodicity schedule in California). However, as shown in Figure 5.6, the finding also holds true for children of any given age. For example, the 483 six year old children who received only an initial screen averaged 45 referrals per 100 screens on their initial screen while the 117 six year old children, who eventually returned for a

Figure 5.6 Referral rate from Initial Screen by Age for Children Who Received Only An Initial Screen And For Children Who Eventually Received a Re-screen.



rescreen, averaged 39 referrals per 100 screens in their initial screen. In fact, for children of every age, those who received only initial screens had more referrals than those who subsequently were rescreened. It appears from this that those children who had fewer referrals are more likely to return for rescreens than their less healthy counter-parts.

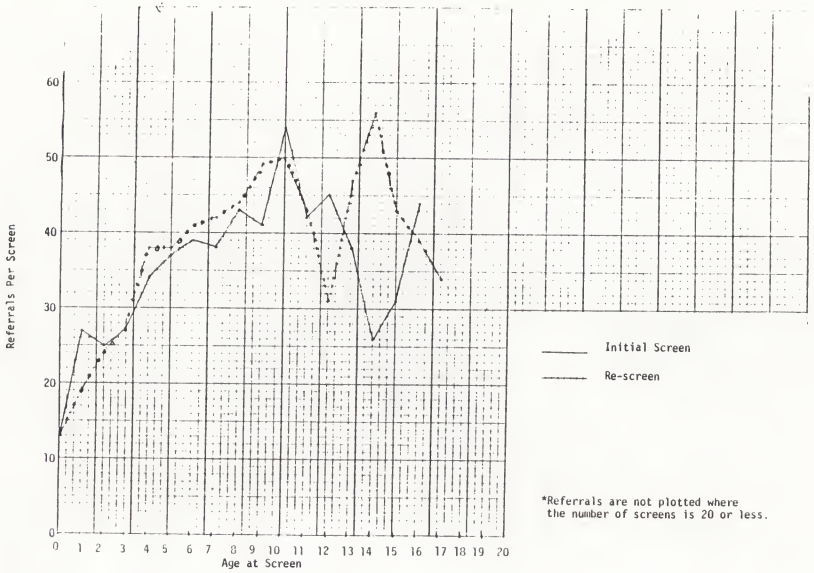
The same pattern appears regarding the receipt of screens later than the first rescreen. That is, if the children who received at least one rescreen are divided into two groups (children who received only one rescreen and those who received at least two rescreens), the group which received only one rescreen had more referrals from their initial screen than the group which received two or more rescreens. In the same way, if the children who received at least two rescreens are divided into a group who received only two rescreens and a group who received three or more rescreens, the former group had more referrals from their initial screens than the latter. Figure 5.6 shows the age specific referral rates for the groups on the initial screen.

Referral Rates from Initial Screens and Rescreens

To control for the effects of the selection factors suggested by the above results, the average number of referrals from initial screens and rescreens were compared including only those children who had received multiple screens. Figure 5.7 shows referrals from initial screens and rescreens for those 4,413 children who received at least one rescreen. For these children, the number of referrals per 100 screens were 25 from the initial screen and 27 from the first rescreen. Neither the plot nor the average number of referrals suggests any generalized reduction in the number of referrals from rescreens compared with initial screens.

The 1,888 children who received an initial screen and at least two rescreens were referred for 15 problems per 100 screens from the initial screen, 20 problems

Figure 5.7 Average Referrals Per 100 Screens from Original and Periodic Screens by Age for Children with at Least Two Screens.*



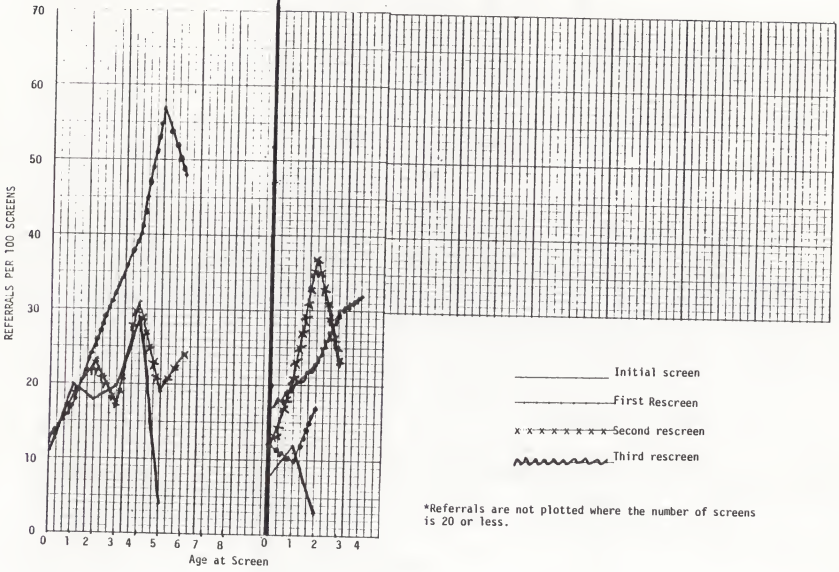
per 100 screens/from the first rescreen, and 18 problems from the second rescreen. Figure 5.8 shows the number of referrals per 100 screens for children of each age. Again, there is no evidence that the second and third screens result in fewer referrals than the initial screen.

The 905 children who were screened four or more times by the project are necessarily clustered at the lower end of the age range. For these children an average of .08 referrals resulted from the initial screen, .13 from the first rescreen, .17 from the second rescreen, and .20 from the third rescreen. Figure 5.9 shows the age specific rates. As before, these figures show no evidence that the average number of referrals declines for the later screens.

The interpretation of the data reviewed so far is that the presence of a preceding screen does not generally appear to lessen the rate of referrals in any given screen, regardless of age when considering at least two years of prior screening experience. This could be interpreted in two ways. First, that periodic screening is needed because there are new problems found, and/or, second, that screening, as conducted in these clinics, did not serve to prevent the onset of new conditions because children who had not been screened had no more referrals than those who had been previously screened. Regarding the second alternative, some have said that while screening may not reduce the number of future problems, it could be reducing the number of serious problems. This is a contention which is difficult to prove one way or the other. This is because seriousness ratings come only from referrals which were seen by a doctor and which the doctor completed a rating. Hence, only about 50% of the referrals have a rating. One estimate of the number of serious problems per screen requires the assumption that the percentage of serious problems (seriousness rating of 4 or 5 on a 5 point scale) is the same for the total number of problems as it is for the

Figure 5.8 Referrals per 100 Screens for Children with at Least Three Screens by Age at Screen*

Figure 5.9 Referrals per 100 Screens from Initial Screens, First Rescreen, Second Rescreen and Third Rescreen by Age for Children with at Least Four Screens*



*Referrals are not plotted where the number of screens is 20 or less.

number of problems with a rating. Therefore, the percentage of problems with a rating which were said to be serious, times the total number of problems gives an estimated number of serious problems. Dividing this by the number of screens produces an estimated number of serious problems per screen.

Those problems for which we do not have ratings may not have the same percentage of serious problems as do the problems for which we do have a rating, but it is assumed that the distortion caused by the assumption equally effects both groups considered. Hence, the absolute numbers are not as important as the comparison between groups. Table 5.4 presents the rate of referrals by age.

TABLE 5.4

Serious Referrals per Screen
Children with more than one screen

Age (in Years)	Estimated number of serious problems per 100 Screens on original screen	Estimated number of serious problems per 100 Screens on second screen
0	1	2
1	3	2
2	3	2
3	4	2
4	9	4
5	10	7
6	12	9
7	8	7
8	8	8
9	12	12

For 7 of the 10 ages presented, the estimated number of serious problems per screen on the second screen was less that what was estimated for children without a previous screen. However, in most of these 7 age groups, the differences were very small. In fact, when Chi-Squares were performed at each age group, the difference was statistically significant only for 4 year olds.

Assume that 1,000 children at each age group are screened; then, when these 1,000 children are screened again, an estimated 55 serious problems will be found. It would be estimated that had the first screen not taken place, then 70 serious problems would have been found. Therefore, there would be an estimated reduction of 15 serious problems or 21.4%. This reduction is not statistically significant at the $\alpha = .05$ level. Assume that this difference were statistically significant, then in order to reduce the seriousness of 15 future problems (remember that the screening does not effect the number of future problems; 15 problems of some kind will be there, but will not be as serious), 1000 children had to be screened. The program was getting conditions treated but was not successful in reducing greatly the seriousness of new problems.

The rate of referrals remains the same on original and periodic screens, and the seriousness of the referrals appears to decline only slightly. However, as previously stated, this is due, in part, to the fact that age is a stronger variable than periodicity affecting the rate of findings. However, it is possible that individual children's problems do disappear as a result of effective treatment or time and maturation.

A set of tables prepared for investigation of this possibility is shown in Appendix M, but will be summarized in Table 5.5

TABLE 5.5

Results of Periodic Screens for Children Having Periodic Screens and Having a Problem on the First Screen

Type of Problems	No. with Problem on 1st Screen	No. and % with same Problem on 2nd Screen		Percent of Original Screen Problems still present at Periodic Screen by Treatment Status after Original Screen: Saw Doctor or Dentist	Did Not See M.D. or Dentist	Status Unknown
Caries	235	58	24.7%	16%*	35.5%*	26%
Other Dental	77	6	7.8%	3%	13.8%	0
Anemia	196	33	16.8%	15.3%	19.1%	22.6%
Vision	42	1	2.4%	0.0%	7.1%	0.0%
Dermatological	62	4	6.5%	2.0%	16.7%	14.3%
Total (of the Problem Categories Considered)	612	102	16.7%	11.4%	26.4%	9.8%

*Read as follows: of the children seeing a doctor or dentist after the original screen, 16% still had a dental problem in the periodic screen; but of the ones who did not see a dentist or doctor, 35% still had a problem referred.

In the dental area, a sample of 18 of the 58 problems that occurred on both screens was reviewed. It was found that:

13 had the same resolution code both times
(4 with treatment both times)
(4 with no finances, no treatment)
(5 patient or parent not cooperative)

2 had resolution code of 6 (no finances) at the first screen, but 1 or 2 (treated) on the second.

3 had a resolution of 3 (still under treatment) on the first and unresolved on the second.

Therefore, when problems occurred again on the periodic screen, some appear to be a result of the lack of treatment or complete treatment between the time of the original and periodic screen. This problem was particularly acute since the project screened both Medi-Cal and non-Medi-Cal children, but did not have treatment funds for the non-Medi-Cal children.

We are left with a conclusion that the original screen and resulting treating helps individual children, especially when treatment resources are fully utilized, but that periodic rescreening is still required for at least two and perhaps more periodic screens, regardless of age, due to the fact the new conditions are found in the children being rescreened as they grow older and become susceptible to certain conditions. Maximum use of the Contra Costa screening data base would require follow-up of individuals who were referred to the private sector with problems at the first screen but who never returned for subsequent screens in order to determine whether the pattern of condition amelioration that was observed among those relatively <u>few</u> children who had problems the first screen and <u>did</u> return for a periodic rescreen.

Another source of data about changes in a child's health status was available in the "healthiness rating". This was a <u>subjective rating</u> of the child's healthiness by the screening examiner on a scale from one to nine where one meant the child had a life-threatening condition, and nine represented the "picture of health". The children who were assessed a rating <u>and</u> had more than one screen <u>and</u> had a rating both times were selected from the project data system for the target areas of East, West, and Central County. The overall distribution of ratings is shown in Figure 5.7. The ratings of 7,8, and 9 indicate the children being screened were essentially healthy, but only 10-20% were considered to be

the "picture of health" by the examiner. The values of eight and 9 were defined as being healthy. Therefore any comparison of ratings would have to use eight and nine as indicating good health. Since the children for whom the initial ratings were reported in Table 5.6 also had a second screen that was rated, comparisons of healthiness on original and periodic screens could be made for those same children. The results are summarized in Table 5.7. The percent healthy on initial and periodic screens was statistically discernable according to McNemar's test (reference Psychometrika 1947:12, p. 153-157) for the children ages 1-11. (See Appendix T for the tables necessary for McNemar's test.) There appeared to be increased healthiness on the second periodic screen, even though the percent with no problem was not much different. Just as the referral rate is not a perfectly reliable measure of ill health (because not all conditions got referred), the healthiness rating is also not perfectly reliable.In another paper[1] it has been shown that individual examiners give different ratings. However, the trend shown here was verified by the examiner in six out of the seven major examiners. This healthiness rating analysis tends to confirm the trend found by comparing the rate of serious problems per screen on the original versus periodic screen that periodic screening shows improved health status of children in spite of the equivalent rate of problems referred.

In order to study the effects of multiple screening, the healthiness rating for the 459 children from the target areas that received three screens were compared. It was found that the 142 children in the 1-11 age group showed

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[1] "Use of a Subjective Healthiness Rating as a Clinically Useful Tool," Harold D. Dickson, Ph.D., Health Services Research Institute, Presented to the APHA Convention, November, 1977.

TABLE 5.6

Distribution of Healthiness Ratings in Initial Screens
by Age Group for Children in the Target Areas
Who Had Multiple Screens and Ratings

RATING		AGE 0 - 11 Months Number	% of Total	1 - 4 Years Number	% of Total	5 - 11 Years Number	% of Total	12 - 21 Years Number	% of Total
VERY POOR HEALTH	1	2	.4%			1	0.3%	0	
	2	0	0			0		0	
	3	0	0	2	.4%	0		0	
	4	0		0		0		0	
SOME PROBLEMS	5	3	.6%	12	2.2%	7	2.3%	2	1.9%
	6	4	.8%	13	2.4%	9	3.0%	3	2.8%
	7	122	23.7%	157	29.2%	80	26.6%	18	16.7%
	8	277	53.9%	282	52.5%	172	57.1%	57	52.8%
VERY HEALTHY	9	106	20.6%	71	13.2%	32	10.6%	28	25.9%
Total		514		537		301		108	

TABLE 5.7

Change in Healthiness Rating
(when both initial and periodic ratings were marked)
in Contra Costa County EPSDT

Age Group	Richmond					All Target Areas						
	Number	% Rated 8 and 9		% Rated Only 9		Number	% Rated 8 and 9		% Rated Only 9		% With Zero Problems Referred (Med. Only)	
		Initial	Periodic	Initial	Periodic		Initial	Periodic	Initial	Periodic	Initial	Periodic
0 - 11 mos.	302	73.5	75.1	19.5	21.5	514	74.5	77.1*	20.6	23.2	86.4% (86.8)	83.5% (83.5)
1 - 4 Yrs.	319	60.1	78.1*	10.3	24.8*	537	65.7	78.6*	13.2	27.2*	70.4 (78.2)	73.2 (79.1)
5 - 11 Yrs.	40	66.5	83.6*	7.6	24.1*	301	67.7	83.0*	10.6	27.2*	67.4 (82.7)	65.8 (83.1)
12 - 21 Yrs.		65.0	77.5	15.	40. *	108	78.7	83.3	25.9	29.6	74.1 (81.5)	68.5 (74.1)

*Statistically discernable according to McNemar's Z test of correlated proportions.

a discernable increase between the first and third periodic screen. In the 1-4 year age group there was a steady increase in healthiness (% scoring 8-9 in the 9 point scale) on each periodic screen--from 62.3% on the first screen, to 74.6% on the second screen, and 84.4% on the third screen. However, in the 4-11 year olds there was no change in the overall rating discernable between the second and third rating, and the gains in healthiness for this group came between the first and second screen.

The screening positive findings were also available for some of the screening procedures for comparison by child across original and periodic screens for children screened in the project target areas. The urine, hearing, and vision test produced very few positive findings on the same children at the periodic screen. However, approximately two-thirds of the children with positive findings on the initial screen also had positive findings on the second screen, as shown in Table 5.8. This does not mean that the children had the same problems, but the same children tended to have a problem. The rate of repeat dental findings was higher in the 1-11 year age group, partially due to the development of new caries, and partially due to the lack of treatment. Only one-third of the youth, aged 12-21, who had a dental problem in the first screen showed another dental problem on the second screen.

It appears that the screening was not picking up the same problems each time. The low rate of repeated problem findings may indicate either an effective treatment program, better testing (i.e. fewer false positives), or natural maturation. Only a controlled study could distinguish the reasons for the increased healthiness or the reduction in positive findings of the same problems.

TABLE 5.8

Comparison of the Positive Findings on Original Versus First Periodic Screen for Children with at Least Two Screens in the Project Areas of the County. (the same children)

Procedure	Number Screened	Initial Screen Number With Positive Findings	Second Screen Results for Those Positive on Initial Screen: Number Still Positive	Second Screen Results for Those Positive on Initial Screen: Percent Still Positive
Age 0-11 Mos.				
Urinalysis	264	0	-	-
Hearing Test	31	3	0	0
Vision Test	51	2	0	0
Physical Exam	511	339	231	68%
Dental Exam	24	2	0	0
Age 1-4 Years				
Urinalysis	333	3	0	0
Hearing	104	4	1	25%
Vision	83	4	1	25%
Physical	533	328	209	64%
Dental	534	210	98	47%
Age 5-11 Years				
Urinalysis	267	2	0	0
Hearing	240	14	2	14%
Vision	273	19	4	21%
Physical	297	154	95	62%
Dental	286	99	50	51%
Age 12-21 Yrs.				
Urinalysis	98	1	0	0
Hearing	104	4	0	0
Vision	103	5	1	20%
Physical	108	37	21	57%
Dental	100	18	6	33%

There were 1,461 children with a healthiness rating on both the original and first periodic screen in the project target areas. A multiple regression with the second rating as the independent variable showed the following relationship:

$$\underset{\text{[Mean]}}{\text{Second Rating}} = \underset{[8.01]}{6.64} + \underset{(.02)}{.18} \times \underset{[7.79]}{\text{(First Rating)}} - \underset{[.35*]}{.12} \begin{pmatrix} 0 - 11\ \text{mo} \\ \text{age group} \end{pmatrix} - \underset{[.34*]}{.08}\ \text{(Mexican American)}$$

(Standard Error) (.04) (.04)

However the coefficient of determination was only .04 indicating that individual variations were too great to predict any one persons rating. However, since the overall F statistic was 2.6, the variables included did cause a statistically discernable difference in the second rating, other things equal. They indicated that the second rating was positively related to the first, and that the 0-11 month group showed a lower rating, and the Mexican American children showed the lowest rating, when controlling for the first rating. The finding of the 0-11 month group showing less improvement is consistent with the other evidence presented.

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*Shows proportion of total sample in this classification because the variables are coded as "0" when the characteristic is absent, and "1" when present.

Conclusions

The rates of referral from the screening were affected primarily by age of the child, ethnicity, and area of county. Discriminate Function analysis was used to show the relative importance of the factors affecting the rates of referral. When controlling for other factors, Medi-Cal children still had more problems than non-Medi-Cal regardless of ethnicity and original screens only slightly more problems. The black children always had the highest rate of referrals.

Previous utilization of health care could not be used to predict the extent or severity of problems to be found in screening except for dental caries. Children who had previously been to the dentist had fewer dental caries referred. Children had a similar rate of referrals on periodic screens as on original when only the children with multiple screens were analyzed. There was a trend toward lower severity of problems on the periodic screens, but the sample wasn't large enough to show statistical significance. Children having multiple screens and referrals on the original screen were found to have referral for the same problem only 17% of the time on a selected group of most frequent problems. The dental problems that reappeared were, for the majority of the cases, a result of getting no treatment after the first round of screening. Therefore, it appears that while conditions are ameliorated, children acquire more problems as they age, regardless of their previous utilization of health services and, therefore, periodic screening remains necessary for detecting these conditions as they arise , but the analysis of the healthiness rating changes showed a generalized increased healthiness of children ages 4-11 on the periodic screens.

The data base could be used as a basis for additional cost-benefit studies if those children who had problems on the original screen, but never returned for a periodic screen could be followed to determine the extent of recurrences of conditions referred.

CHAPTER 6

COSTS

This project was funded by a combination of federal grant funds, state reimbursement for Medi-Cal children through third party billing, county funds for organizational overhead not funded by the grant, treatment funds of Crippled Childrens' Service, physicians and dentists who took on non-Medi-Cal patients without remuneration, and community groups who provided manpower for assisting in the various community efforts described in the report. Attaching a dollar value to such a venture which indicates resource use to such an extent that others could plan and budget programs with reasonable accuracy and decisions concerning cost benefit can be made is a complex task. One major problem with the cost accounting of a demonstration project is that the project contains some elements of research and data collection not otherwise found in an operational activity. There is also an organizational start-up cost which, in an ongoing program, could be amortized over a much longer period of time than the 3 to 4 years involved in a demonstration project. Also, quarterly cost figures are not useful because the county does not use an accrual accounting system.

Due to the aforementioned problems, the general approach to the cost analysis was to segment start-up and operational costs, to consider both actual out-of-pocket expenses and use of economic resources, to carefully monitor the use of personnel time, and make estimates required for a volume of screening and a staffing represented by the most stable period of the project. Then, to compute costs, a measure of screening activity was developed and the unit cost figures prepared.

For the project years 1973-1974, 1974-1975, and 1975-1976, the project spent $174,540, $265,689, and $351,932, excluding evaluation. The evaluation was

funded at first by a grant from the Social/Rehabilitation Service to the Health Services Research Institute, and, also, $14,000 of the project funds through a contract with Contra Costa County. Later, more of the HSRI funds came through the evaluation component of project funds until it was $124,711 in 1975-76. The estimates to be presented show an economic cost of $299,050; $221,979; and $251,876 for the three project years respectively, excluding evaluation. These estimates were prepared as shown in Figure 6.1 A,B,and C on the following pages. The following discussion will review the estimates on those figures--one for the start-up period, a middle range period, and a fully operational period in East and West County target areas. Most of the chart is self-explanatory, but the items needing more explanation or description are mentioned below.

Administrative personnel--includes estimated person hours and associated dollars for the County Health Officer, project directors, project coordinator, and data and project coordinator. The split of personnel hours into major activities for aides and clerks came from the staff activity logs completed each week by CHW indicating the percent of their time spent in each activity for that week. The consulting physician fee was a fee paid to County Medical Services in return for having a doctor onsite to supervise the screening, check over the referrals, and treat minor problems found in screening when children do not have an ongoing source of regular medical care. This physician also assisted in screening. The evaluation was assumed to cost $100,000 the first year, and $80,000 from there on--and covers the cost of data processing as well as experimental variations searching for cost effective methods of conducting outreach, screening, and follow-up. This amount could be reduced under a simplified system of inputting and storing data.

Costs that could not be directly assigned to each basic level of activity involved in such a project (screening, outreach, follow-up, case monitoring,

Figure 6.1A
APPROXIMATIONS OF CONTRA COSTA "START-UP" COSTS
1973-74

("Economic Potential"--not out of pocket costs)

Area of Expense	Dollar Expenditures	Screening Time/ Dollar	Case Finding Time/ Dollar	Case Monitoring Time/ Dollar	Diagnosis Treatment Time/ Dollar	Indirect Costs Time/ Dollar	Notes 3,000 screens
Personnel Services							
Fringe Benefits	35,550					1.00/ 35,550	(.18) x (197,500)
Adm. Personnel	50,000		.29/ 14,500	.07/ 3,500		.64/ 32,000	
Nurses	42,000	.99/ 41,580		.01/ 420			($7.30/hr)x(160)x(12)x(3FTE)
Aides	80,000	.20/ 16,000	.43/ 34,400	.10/ 8,000		.27/ 21,600	($4.16/hr)x(160)x(12)x(10FTE)
Clerks	25,500	.42/ 10,710	.02/ 510	.13/ 3,315		.43/ 10,965	($4.40/hr)x(160)x(12)x(3FTE)
Travel	3,000	.30/ 900	.50/ 1500	.20/ 600			
Operating Expenses							
Supplies Medical	2,500	.75/ 1,875			.25/ 625		
Office	5,000					1.00/ 5,000	
Consulting (Physician)	25,000	.40/ 10,000			.50/ 12,500	.10/ 2,500	(.5)x($50,000)
Telephone	3,000	.50/ 1,500	.30/ 900	.10/ 300		.10/ 300	
Evaluation Op	100,000	.50/ 50,000	.10/ 10,000	.40/ 40,000			Assumes data system in existence
Rent	15,000	.40/ 6,000	.30/ 4,500	.20/ 3,000		.10/ 1,500	
Equipment Rental	2,000					1.00/ 2,000	
Immunizations	2,000				1.00/ 2,000		
Maintenance	5,000					1.00/ 5,000	Assumes initial renovation
Utilities	500					1.00/ 500	
Training	2,000	.72/ 1440	.21/ 420	.07/ 140			
Other (i.e.: medical insurance)	1,000					1.00/ 1,000	
TOTAL	$399,050					$117,915	
DIRECT	281,135	.50/ 140,005	.24/ 66,730	.21/ 59,225	.05/ 15,125		
INDIRECT	117,915	58,957	28,300	24,762	5,896		
OVERALL	399,050	198,962	95,030	84,037	21,021		
TOTAL							

Figure 6.18
APPROXIMATIONS OF OPERATING COSTS OF CONTRA COSTA
1974-75
(at Economic Potential)

Area of Expense	Dollar Expenditures	Screening Time/ Dollar	Case Finding Time/ Dollar	Case Monitoring Time/ Dollar	Diagnosis Treatment Time/ Dollar	Indirect Costs Time/ Dollar	Notes
							Assuming 3,800 physical exams and complete screens
Personnel Services							
Fringe Benefits	46,530					1.00/ 46,530	
Adm. Personnel	50,000		.29/ 14,500	.07/ 3,500		.64/ 32,000	
Nurses	56,064	.99/ 55,503		.01/ 561			(4FTE)
Aides	96,000	.20/ 19,200	.43/ 42,280	.10/ 9,600		.27/ 25,920	(12 FTE)
Clerks	25,500	.42/ 10,710	.02/ 510	.13/ 3,315		.43/ 10,965	(3 FTE)
Travel	6,000	.30/ 1,800	.50/ 3,000	.20/ 1,200			
Operating Expenses							
Supplies Medical	4,000	.75/ 3,000			.25/ 1,000		
Office	5,000					1.00/ 5,000	
Consulting (physician)	35,000	.40/ 14,000			.50/ 17,500	.10/ 3,500	
Telephone	2,000	.50/ 1,000	.30/ 600	.10/ 200		.10/ 200	
Evaluation Op	80,000	.50/ 40,000	.10/ 8,000	.40/ 32,000			
Rent	20,000	.40/ 8,000	.30/ 6,000	.20/ 4,000		.10/ 2,000	
Equipment Rental	4,000					1.00/ 4,000	
Immuniza-tions	3,000					1.00/ 3,000	
Maintenance	1,000					1.00/ 1,000	
Utilities	500					1.00/ 500	
Training	2,000	.72/ 1440	.21/ 420	.07/ 140			
Other (i.e., medical insurance)	1,000					1.00/ 1,000	
TOTAL	437,594					135,615	
DIRECT	301,979	.51/ 154,653	.25/ 74,310	.18/ 54,516	.06/ 18,500		
INDIRECT	135,615	69,164	33,904	24,411	8,136		
OVERALL	437,594	223,817	108,214	78,927	26,636		

Figure 6.1C
APPROXIMATIONS OF OPERATING COSTS OF CONTRA COSTA
1975-76

Area of Expense	Dollar Expenditures	Screening Time/ Dollar	Case Finding Time/ Dollar	Case Monitoring Time/ Dollar	Diagnosis Treatment Time/ Dollar	Indirect Costs Time/ Dollar	Notes
Assuming 4,300 physicals and complete screens.							
Personnel Services							
Fringe Benefits	47,893					1.00/ 47,893	
Adm. Personnel	50,000		.29 14,500	.07 3,500		.64/ 32,000	
Nurses	70,000	.99/ 69,300		.01/ 700			(5 FTE)
Aides	103,834	.14/ 14,537	.35/ 36,342	.22/ 22,843	.02/ 2,077	.27/ 28,035	(13 FTE)
Clerks	42,240	.41/ 17,318	.01/ 422	.15/ 6,336		.43/ 18,163	(5 FTE)
Travel	6,000	.30/ 1,800	.50/ 3,000	.20/ 1,200			
Operating Expenses							
Supplies Medical	4,700	.75/ 3525			.25/ 1175		
Office	5,000					1.00/ 5,000	
Consulting (physician)	35,000	.40/ 14,000			.50/ 17,500	.10/ 3,500	
Telephone	2,000	.50/ 1,000	.26/ 520	.14/ 280		.10/ 200	
Evaluation Op	80,000	.47/ 37,750	.11/ 9050	.42/ 33,200			
Rent	20,000	.40/ 8,000	.26/ 5,200	.24/ 4,800		.10/ 2,000	
Equipment Rental	4,000					1.00/ 4,000	
Immuniza-tions	3,000					1.00/ 3,000	
Maintenance	1,000					1.00/ 1,000	
Utilities	500					1.00/ 500	
Training	2,000	.72/ 1440	.21/ 420	.07/ 140			
Other (i.e., medical insurance)	1,000					1.00/ 1,000	
TOTAL	478,167					146,291	
DIRECT	331,876	.51/ 168,670	.21/ 69,454	.22/ 72,999	.06/ 20,753		
INDIRECT	146,291	74,608	30,721	32,185	8,777		
OVERALL	478,167	243,278	100,175	105,184	29,530		

the total indirect cost was spread between the basic activities in the same proportion as total direct costs appeared in each activity. Note that 30% of the total costs were classified as indirect costs. For the ensuing operational years after the "start-up" year, the staff levels were increased as were associated costs such as rent for screening and office space. Many of the costs are assumed to change very little with increased volume because there is a high fixed cost in creating the system for screening, data collection, etc., but the incremental costs of adding more patients is very little within the range of achievable volume of screens per year. The staffing levels were based on actual staffing patterns during the years of the project.

The Units of Service

The basic unit of service is the "complete screen" of a child. It is assumed that in the start-up year 3,000 screens would be performed, the first fully operational year, 3,800 and the second operational year 4,300 screens. The "complete screen" was used as a concept because the State billing system will only pay for a screen that occurs on one visit.

As discussed in Chapter 2, a program that assumes and reimburses for only one visit per screen loses an opportunity for cost savings due to a "retest before referral" policy. The unit figure used here includes all the visits and costs necessary to complete one screen. The basic common unit of the screen is the physical examination. Therefore, the number of screens was approximated by the number of children getting the physical examination in each year. Such a measure will make the cost per screen look quite high because a great deal of activity occurred within a screening clinic including immunizations, some health education, minor treatment, and retests and rechecks in order to accomplish a

single screen. The differential amount of work required for different age groups and different types of screens means that care must be used in comparing costs in Contra Costa County to those incurred elsewhere. As an assistance with this problem the principle evaluator developed a concept of relative value units for individual parts of a complete screen--called CHAV (Child Health Assessment Value Units). The following paragraphs will describe the concept and then the utility in their use in relation to the Contra Costa costs will be presented.

Child Health Assessment Value Units (CHAV)/ Screening Costs

Fees paid for screening must be sufficient to stimulate the activity, but low enough to encourage cost effective approaches to the process. When projects on fixed budgets are being compared for cost per unit of service, it is desirable to have equivalent units of service in the measurement of the service output. The cost per child screened is not appropirate for comparison unless the screens are identical. Screening packages do and should differ between screen locations as do the ages of those children being screened. In an attempt to establish an adequate measure of screening service output, the following approach was taken:

1. All possible procedures that could be accomplished were listed.

2. The unit value of a complete history for each age group was obtained from the California Relative Value Scale.

3. The times for conducting each procedure in the Barrio Clinic[1] were used to estimate the cost of each procedure.

4. The cost of each procedure (assuming the lowest possible skill level that could adequately perform the procedure) was computed. The health history

[1]The Barrio Final Evaluation Report, Fred Fiedler, Ph.D., Harold Dickson, Ph.D., Health Services Research Institute, November, 1975

cost was divided into each of the other procedures' cost. A ratio of the cost of the procedure to the cost of the history was then multiplied by the California Relative Value Units for the complete history.

5. Once the units for original screens for 1-4 year olds were computed, the units were adjusted to account for differences in time and resources necessary for each age group. Additional localized data could lead to refinement of these values. The key is to consistently use the same units for comparison or billing for all providers. (See Figures 6.2 and 6.3 for the CHAV units and example.)

The basic CHAV assumes that the child is already present for screening. However, if the agency conducting the service is also responsible for getting the child and parent to the screening center, then additional value units must be awarded in considering fees. Providing that the screening agency can work through the schools. The resources needed to conduct outreach will be less for the school age children. In addition, follow-up expenses must be considered. If the screener is responsible for follow-up and case monitoring, the screening agency should be adequately reimbursed or given appropriate staff positions. Younger children will generally have fewer problems per screen and require less follow-up per child.

The Tables 6.1 and 6.2 show the data base used to compute units of service and Table 6.3 applies these in the computation of the CHAV per physical examination for each age group in the two different parts of the county. This shows the type

Figure 6.2
Child Health Assessment Value Units

Procedure/Condition	Under 1	1-4	5-11	12-17	Under 1	1-4	5-11	12-17
Registration (record creation)	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0
Health Hx	6.5	8.7	11.0	13.0	5.4	6.5	8.7	11.0
Measurements	1.5	1.3	1.2	1.2	1.5	1.3	1.2	1.2
Urinalysis Dipstick	2.5	2.2	2.0	2.0	2.5	2.2	2.0	2.0
or								
Culture	6.5	6.2	6.0	6.0	6.5	6.2	6.0	6.0
Blood-Drawing								
Finger-stick	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Venipuncture or multiple capillary tubes with finger stick	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Blood-Tests								
Entire combination of below	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Hematocrit	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Differential	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lead (Blood level)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Sickle Cell	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
G6PD	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
VDRL			3.0	3.0	3.0	3.0	3.0	3.0
Hearing		3.5	3.0	3.0		3.5	3.0	3.0
Vision		2.5	2.5	2.5		2.5	2.5	2.5
Physical Exam	10.0	13.0	15.0	15.0	10.0	13.0	15.0	15.0
Developmental								
Complete	10.0	13.0	13.0	13.0	10.0	13.0	13.0	13.0
Partial or Reading			6.5	6.5			6.5	6.5
Dental Ped or PNP	.5	1.0	1.0	1.0	.5	1.0	1.0	1.0
Hygienist	5	6.0	5.0	5.0	5.0	6.0	5.0	5.0
Dentist	4	7.0	6.0	6.0	1.0	7.0	6.0	6.0
Fluoride Treatment	1	3.0	3.0	3.0	2.0	2.0	2.0	2.0
Immunization (incl. TB)								
Check								
Record available	1	1	1	1	1	1	1	1
Record not available/ if gets	10	10	10	10	10	10	10	10
Given								
Given at screen*	2	2	2	2	2	2	2	2
Health Ed--problems (all children get points but reflects referral rate)	1.5	3.5	3.5	3.5	1.5	3.5	3.5	3.5
Health Ed--preventive (dental, nutrition, otitis, use of health facilities)	5	5	5	5	3	3	3	3
Retest policy: If retests or further tests conducted on positive findings at later screens or at same screen, add 1 to the screen steps where the retest is done to account for the recheck activity that gets conducted. Not all children will require a retest, but when it occurs, it would be as expensive as a rescreen. It is difficult to keep track of the number of retests so a unit value per screen was chosen to keep the computation simple.								
Responsible for outreach	50	60	30**	40	30	50	20	40
Responsible for follow-up	20	30	30**	30	20	30	20	30

*Two points for each immunization given per screen.
**Assumes working relationship with the schools.

Figure 6.3

AN EXAMPLE OF THE CALCULATION OF THE CHAV

Example -	Contra Costa Original Screen of a 4-Year-Old	Annual Periodic Screen of a 4-Year-Old	Original Screen for An Infant
Registration	4.0	4.0	4.0
Health History	8.7	6.5	8.7
Measurements	1.3	1.3	1.5
Dipstick urine	2.2	2.2	2.5
Finger stick - multiple capillary tubes used	4.4	4.4	4.4
All Lab Tests	10.0	10.0	10.0
Hearing	3.5	3.5	0.0
Vision	2.5	2.5	0.0
Physical exam	13.0	13.0	10.0
No developmental	-	-	-
Dental (PNP)	1.0	1.0	0.5
No fluoride	-	-	-
Immunization check			
record available	1.0	1.0	1.0
given	5.0	5.0	5.0
Health Education	2.0	2.0	2.0
Hearing	1.0	1.0	0.0
Vision	1.0	1.0	0.0
	60.6	58.44	49.6

Therefore, in the example above, the infant screens (at original screen) should receive 81.8% of the value of a 4-year-old screen if considering a very young population. In other words, if costs are given for a 4-year-old screen (on the average), then persons desiring to screen only infants should multiply the cost per screen by .818 to get a comparable figure for infant screens.

Table 6.1
UNITS OF SERVICE

1974-75
Brentwood (East County)

Procedure	Original Screens Ages: 0-11	1-4	5-11	12-21	Unknown	Periodic Screens Ages: 0-11	1-4	5-11	12-21	Unknown
Ch History	118	365	378	339	0	122	124	61	19	1
Urinalysis	81	267	336	323	0	62	58	48	16	1
Hematocrit	40	315	357	313	0	36	103	57	19	1
Sickle Cell	1	6	2	3	0	0	0	0	0	1
VDRL	1	0	3	322	1	0	0	1	19	0
PKU	62	16	1	1	0	58	7	0	0	0
Hearing	26	181	371	336	0	40	57	60	18	1
Vision	26	165	366	334	0	39	53	57	18	0
Physical	120	370	385	341	0	124	129	63	19	1
Denver	23	84	54	0	0	39	63	14	0	0
Dental	20	331	371	333	0	29	105	59	18	1
Immunization RA*	90	278	288	256	0	100	100	50	17	1
RNA**	30	92	97	85	0	24	29	13	2	0
Given (immun.)***	528	673	700	594	0	546	235	88	34	2
Tine****	18	155	539	606	0	18	54	41	13	0
Blood Drawn	40	315	357	313	0	36	103	57	19	1
Registration & Measurements	120	370	385	341	0	124	129	63	19	1
Health Ed	120	370	385	341	0	124	129	63	19	0
Health Ed	120	370	385	341	0	124	129	63	19	0
OR	120	370								
FU	120	370								
Imm. Stat Check	69	286	304	273	1	43	81	42	21	2
A	245	681	643	455	3	103	165	69	24	2
B	245	280	643	455	3	103	164	69	24	2

*RA = No. with record available

**RNA = No. with record not available at time of screen

***Given = No. of immunizations given(of all types). This results in 4.4, 1.82, 1.4, 1.78 per physical by age group on the initial screen.

****Tine = No. of tine tests given. These numbers result in .15, .42, .65, .69 per physical for each age group on the initial screen.

Table 6.2
UNITS OF SERVICE

1974-75
Richmond (West County)

Procedure	Original Screens Ages: 0-11	1-4	5-11	12-21	Un-known	Periodic Screens Ages: 0-11	1-4	5-11	12-21	Un-known
Ch History	240	672	621	450	3	102	160	68	24	2
Urinalysis	137	456	573	415	2	45	89	55	22	2
Hematocrit	120	619	591	404	3	38	114	60	22	1
Sickle Cell	60	308	338	286	1	14	19	7	7	2
VDRL	1	4	7	406	3	0	0	1	20	0
PKU	116	8	5	0	3	36	0	0	0	1
Hearing	3	154	595	431	1	0	17	54	23	0
Vision	2	94	574	415	1	0	14	50	22	0
Physical	245	667	630	450	3	103	157	64	24	2
Denver	16	35	7	0	0	12	8	0	0	0
Dental	11	541	609	435	2	4	96	63	24	1
Immunization										
RA *	184	500	472	338	2	82	125	51	18	2
NA **	61	167	158	112	1	21	32	13	6	0
Given ***	1078	1213	882	801	9	453	285	89.6	43	0
Tine ****	37	280	409	310	2	16	66	42	17	0
Blood Drawn	120	619	591	406	3	38	114	60	22	1
Registration & Measurements	245	667	630	450	3	103	157	64	24	2
Health Ed	245	667	630	450	3	103	157	84	24	2
Health Ed	245	667	630	450	3	103	157	64	24	2
OR	245									
FU	245									
Imm. Stat Check	117	406	446	313	0	84	100	58	16	0
A	121	376	386	342	0	126	130	66	19	0
B	121	375	387	342	0	126	130	66	19	0

*RA = No. with record available

**RNA = No. with record Not available at time of screen

***Given = No. of immunizations given (of all types). This results in 4.4, 1.82, 1.4, 1.78 per physical by age group on the initial screen.

****Tine = No. of tine tests given. These numbers result in .15, .42, .65, .69 per physical for each age group on the initial screen

TABLE 6.3
CHAV FOR 1974-75
East and West Contra Costa County

Age Original	Brentwood CHAV	Brentwood Physicals	Brentwood (CHAV Physical)	Richmond CHAV	Richmond Physicals	Richmond (CHAV Physical)	Total CHAV	Total Screen	Total (CHAV Physical Ratio)
0-11	5525	120	46	11465	245	47	16990	365	47
1-4	20315	370	55	35960	667	54	56275	1037	54
5-11	23923	385	62	39379	630	63	63302	1015	62
12-21	23023	341	68	31648	450	70	54671	791	69
Unknown	3	0	--	188	3	63	191	3	64
Original Screen Totals	72789	1216	60	118640	1995	60	191429	3211	60
Periodic									
0-11	5246	124	42	4264	103	41	9507	227	42
1-4	6722	129	52	6985	157	44	13707	286	48
5-11	3596	63	57	3546	64	55	7142	127	56
12-21	1191	19	63	1556	24	65	2742	43	64
Unknown	52	1	52	92	2	46	144	3	48
Periodic Screen Totals	16807	336	50	16443	350	47	33242	686	48
Overall Total	89596	1552	58	135083	2345	58	224671	3897	58

of population and units of service upon which the cost data is based.

The numbers presented in the Figure 6.1 can now be used to compute unit costs, recognizing that the cost for any single age group will differ according to the ratio of the age specific CHAV to the overall CHAV per screen in the total data base (58 CHAV per screen).

In addition to the dollar amount presented in Figure 6.1, referred to as Economic Costs, the actual expenses were approximated by removing the costs of County administrative staff who spent time on the project. For actual expenses, screening amounted to 51.15% of the total costs, outreach, 24.72%, follow-up, 18.04%, and minor on-site diagnosis and treatment, 6.09%. This is mentioned to point out the fact that to achieve a 30% penetration rate of the target population and achieve a 70% follow-up rate on problems required outreach and follow-up efforts which amounted to (24% + 18% =) 42% of the total cost which was almost as high as the screening cost alone.

Table 6.4 reflects that the cost of a screen is somewhere between $37 and $58 per full screen, depending upon the type of costs included. The total cost, if outreach and follow-up are included at a sufficient rate to encourage 30% of the eligibles to show and 70% of the problems to get treated, will be somewhere between $73 and $114, depending upon the type of costs considered.

How do the costs reported here compare to other approaches for figuring costs? Project staff estimated that to open the door of the clinic would require the following:

		Hourly Rate (1975 Dollars)
Space and Utilities	@	$10.00
1 M.D.	@	20.00
1 P.N.P.	@	14.00
1 R.N.	@	12.00
1 Clerk	@	5.00
1 Aide	@	5.00
		$66.00

TABLE 6.4
Costs of An Operational EPSDT Program in Contra Costa County

Estimated Economic Cost and estimated actual expenses in 1975 dollars. Check the Child Health Assessment Value units (CHAV) for the group that these costs may be compared to.*

	3800 Screens (full screens)				4300 Screens (full screens)			
	Economic Cost**		Actual Expense		Economic Cost		Actual Expense	
	W Eval.	W/O Eval.	W Eval.	W/O Eval.	W Eval.	W/O Eval.	W Eval.	W/O Eval.
Outreach	$28.00 (.4)	$23.00	$22.00	$18.00	$23.00	$18.00	$18.00	$15.00
Screening	$58.00 (.51)	$47.00	$46.00	$37.00	$57.00	$46.00	$46.00	$37.00
Minor *** Diagnosis and Treatment on-site	$7.00	$6.00	$6.00	$5.00	$7.00	$6.00	$6.00	$5.00
Follow-up	$21.00	$17.00	$17.00	$14.00	$25.00	$20.00	$20.00	$16.00
TOTAL	$114.00	$93.00	$91.00	$74.00	$112.00	$90.00	$90.00	$73.00

*Table 6.3 contains the CHAV for various age groups. The costs here are shown for the average of 58 CHAV. Original screens for a child 0-11 months should be computed as $\frac{47}{58}$ x cost per screen since the CHAV per physical for the project were 47.

**Includes $21.00 per screen
Evaluation experimentation and data system

***This is not the full cost of treating all conditions referred outside the screening clinic (as most were). The full costs would be closer to $20-30 per child screened.

If two patients are scheduled for each half hour, there could be 16 patients in a four hour session. Assume that 21 patients are appointed to account for broken appointments. This would represent a cost of:

$66.00 per hour x 4 hours = $264.00
$252.00 per clinic ÷ 16 screened = $16.50 per screen
(if only 10 show up for appointment, then $264 ÷ 10 = $26.40 per screen)

Why, then, are the screening figures shown on Table 6.4 so high? Because there is idle time when show rates decrease, and there is organizational overhead to cover, including training, administration, fringe benefits, insurance, equipment, supplies. It also does not count the retests, rechecks, etc. that are needed. A figure between $15 and $20 probably represents the true costs of screening an additional person once the other overhead costs are recovered. This marginal cost would not be sufficient to sustain screening activity in Contra Costa County, but for a short time, additional screens could be done for this fee, if the child showed without outreach staff.

Some planners prefer to see the costs presented in a budget format. This is shown as Table 6.5 included for this purpose. The actual expenditures in the example would total $386,000 for 4,300 children, with an economic cost of $478,167.

TABLE 6.5

Sample of a Budget for Contra Costa County EPSDT at 4,300 Screens/Year including Outreach, Screening, Follow-up and On-Site Treatment of Minor Problems.

Personnel	Economic Costs: Annual Dollar Budget (1975 Dollars)	Reductions to get Actual Expenses of the Project
Administrative	$ 50,000	- $30,000
Nurses (5)	70,000	
Aides (13)	103,834	
Clerks (5)	42,240	
Fringe Benefits	47,240	- 5,000
Travel	6,000	- 2,000
Supplies	9,700	
Consultant (Physician)	35,000	- 5,000
Telephone	2,000	
Rent	20,000	
Equipment	4,000	
Immunizations	3,000	
Maintenance	1,000	
Utilities	500	
Training	2,000	
Other	1,000	
Evaluation	80,000	
	$ 473,167	- $92,000

$478,167 - 92,000 = $386,000

Costs of School Screening

The school screening program was described in Chapter 4. The costs have been estimated based on the data reported by the project and school staff on the time involved. The estimated supplies expense was $5.00 per child and personnel hourly costs were figured as $6.00 per hour for a clerk, $5.58 for aides, $11.50 for R.N., $12.00 for PHN, $14.00 for nurse examiners, $20.00 for M.D., $13.00 for nutritionist, $13.00 for dental hygienist, and $14.00 for the supervising public health nurse.

In terms of 1975 dollars, these hourly rates should be sufficient to cover personnel direct costs and overhead costs. However, the costs still understate the indirect cost of office space, training administration, etc., that go along with such a project. In order to make an adequate comparison of the school screening cost to the clinic cost, the clinic average cost should be adjusted upward by 9% to account for the higher CHAV among the 5-11 year old population. The results are shown in Table 6.6. The costs appear to be comparable to health department clinic screening, except for the Boys' Club where the volume screened was very high and the community workers did most of the planning. Perhaps such a volume could not be sustained for long, but there is a chance to save money through this activity two or three times per year. The only way to make the school screening cost-effective is to eliminate the need for parent attendance or visiting to provide a child history.

Very few of the problems discovered required a history until the time of diagnosis and treatment. Whether or not a 16% reduction in the "probable future cost of school screening" would be worthwhile or not would depend upon the philosophy of the role of the parent in preventive child health behavior.

TABLE 6.6
Comparison of Outreach and Screening Cost between regular clinics, school screening, and Boy's Club Health Happening

Cost per Screen	Actual Expenses for Health Department	Economic Cost to Health Department and School	Probable Future Cost*** (Actual)
Regular EPSDT Clinics	$75	$85 - $90	$75
Cambridge School*	$70	$84	$60
Meadow Home School	$72	$82	$60
Freemont Elementary**	$70	$100	$60
Boy's Club	$22	$25	$30 - $45

*The school spent an additional $10 in Cambridge and Meadow Homes and an additional $25 in Freemont.

**Marina Elementary was left out due to the extreme low volume (3 children). With such a volume, the screening would cost over $200 per child.

***Assuming less planning time and greater use of community workers in outreach. This figure could probably be reduced by $10 to $20 per child by elimination of parent participation in the outreach and screening process except to provide written consent and, perhaps, a simple history through a note sent home to the parents.

Study of the Medicaid Costs Impact of the EPSDT Project

Since the project screened children on Medi-Cal, the dollar impact of the screening, diagnosis and treatment efforts of Contra Costa County could be measured through a review of the beneficiary profiles provided by the California State Department of Health. This beneficiary profile contains the list of all claims paid on behalf of a client, and the services rendered during a specified time period. The names and Medi-Cal numbers for this study were first selected in September, 1976, from the HSRI computer file of Contra Costa Medi-Cal children screened between July 1974 and June 1975 in Contra Costa County (primarily East and West Counties) and in addition Medi-Cal eligible children who were appointed to the Richmond Clinic during the outreach study, but who did not show were also selected. From these lists of 1137 children, Medi-Cal numbers and problems found, the following selections were made:

All children with medical problems (228)

33% of the 909 children with no medical problems (randomly chosen)

Among the list of children with Medi-Cal and no medical problems there were over 135 having dental problems. These were tabulated separately at the end.

Therefore, in order to apply the results to a total target population, the rate of children with medical problems and dental problems will have to be recognized. The state required both Medi-Cal numbers and an accurate birth date for identification purposes. Therefore, the profiles of twelve of those children on the original list of children having medical problems and fifty-six of those on the list as having no medical problems were not received from all names submitted. The following chart summarizes the sample number selection.

Selection of Children for Medi-Cal Cost Study

Category	# in Original List of Children	# Selected for Sample	# Submitted to State with Correct ID Information	# with Information Received from The State	# Received As A Percentage of Requested
Medical Problems	228	228	216	157	72.7%
No Medical Problems	909	303	247	180	72.8%
Not Screened	115	115	115	111	96.5%

The low return may have been due to errors in the reading of the Medi-Cal numbers either on the screening sheet, the computer, or at the State. At first it was thought that perhaps those with no profiles returned also had no claims for the period in question. Since some children's profiles were returned with no claims, it is safe to assume that was no dollar bias in the profiles not returned. Therefore, those persons with profiles not returned were excluded from the analysis.

The interest in the cost data was a comparison of the costs during the year prior to screening to the one year period after screening. This poses two problems--a screening date for unscreened children and eligibility loss or gain. First, the group of children who were unscreened (i.e., no shows for clinic appointments) have no date of screening; so,it is difficult to compute the year. prior and a year after an unknown date. July 20, 1974, was chosen since it fell midway between the screening date extremes for the screened children of the study.

The problem of eligibility is that a particular child may not have been eligible for a year before and a year after screening. Since eligibility dates were not obtained, it was not possible to control for this problem. However, there is no reason to assume bias in either direction, and ,in fact ,children do enter and leave eligibility status, so these are the costs faced by the Medicaid agency overall.

Table 6.7 shows the overall results of the study for the medical problems, dental problems, and for a total projection to the county under an assumption of 30%, 50% and 85% penetration of the AFDC population. With the finding that even with an 85% penetration rate, given the rate of treatment that was obtained, there would still only be $2 per AFDC eligible increase in Medicaid costs over the previous year's level.

The cost impact of such an effort would be greater in a state or locality where the utilization of Medicaid benefits had been very low prior to a screening effort. Why is this differential increase so low? There are several reasons for the small change. First, not all of the treatment stated by Contra Costa project staff on the follow-up sheets show up on the Medicaid beneficiary claims profile. Only 62.7% of the medical problems reached diagnosis according to the follow-up sheets, and of these, only 45-50% resulted in a claim paid by Medi-Cal.

The dental problems present a similar picture where only 55% of the problems reached treatment according to the HSRI data system and of these, only 60% resulted in a dental paid claim to a dentist under Denti-Cal. This phenomenon has been observed by HRSI staff in nearly all studies of Medicaid beneficiary profiles and indicates that either dentists, health departments, or other agencies are providing the payment for problems referred. In this sense, Medicaid gets a "good deal".

TABLE 6.7

EPSDT Impact on Medicaid Cost in 1975 Dollars (1)
(Standard Deviation in Parantehses)

	Number in the Total Group	12 Months before the screening	12 Months after (2) the Screening
Medical Costs			
Screened - no problems	163	$78 (184)	$81 (199)
Screened - problems	141	$138 (299)	$130 (199)
Unscreened	111	$153	$134
Dental Costs			
Screened - no problems	160	$17 (48)	$24 (79)
Screened - problems	140	$10 (10)	$71 (108)
Unscreened	111	$16	$24
(3) Total Projection for County (per AFDC eligible @ 30% screened)		$149.98	$142.34
(4) Alternate Projection (% 50% screened)		$137.22	$141.50
(5) 2nd Alternate Projection (@ 85% screened)		$115.11	$117.79

NOTES: (1) The age distribution in the screened and unscreened children of the sample includes 14% under age 1, 47% age 5 and below, and 24.3% above age 12.
(2) The charge for the screen is not included.
(3) Assuming 30% screened, 20% with medical problems and 20% with dental problems referrals.
(4) Assume same as above but 50% screened.
(5) Same as above, but 85% penetration rate.

Notice on Table 6.8 that in some cases where the problem status was unknown and even when the resolution code showed the parent to have moved or been uncooperative, dental claims still appeared. The return of beneficiary profile information to local EPSDT units could greatly assist in determining priorities for case monitoring, with priority on those with no paid claims on file.

Another reason for costs changing very little is that certain problems that appear before and after screening have a random nature and perhaps can not be prevented by a screening program--such problems are fractures, bronchitis, abortions and deliveries, and pneumonia. Table 6.9 shows the problems for individuals who had greater than $400 total medical and dental costs either before or after the screening date, by age group and screening finding.

The age breakdown in Table 6.9 results in a sample which is too small for broad generalization, but it appears that the areas of potential cost benefit differ considerably by age group with prevention of gastroenteritis, failure to thrive, bronchitis, and awareness of G6PD deficiency being important for those age 0-11 months, prevention of hospitalization for tonsillitis important for 1-4 year olds and 5-11 year olds, and family planning for the 12-21 year group.

It was found that 4-5% of the children account for 50% of the total costs and 43% account for 90% of the cost. In the sample, 62% of the no-shows and 77% of the shows for screening had costs per year of less than $100. A comparison of the screened and unscreened children shows that the pattern of health care does not change a great deal from year to year among the unscreened, but among the screened children, at least some of the high-cost items change from acute emergency type of conditions to correction of chronic debilitating

TABLE 6.8

The Comparison of Follow-up Resolution Codes on Problems to the Presence of Medicaid Claims in the Beneficiary Profile

RESOLUTION STATUS	MEDICAL		DENTAL	
	Number of problems with the status	Percentage with appropriate paid claims	Number of problems with the status	Percentage with appropriate paid claims
Status unknown to project	14	7.17%	7	14%
Treatment completed at diagnostic visit	36	50.0%	30	73%
Treatment completed at a later visit	17	47.07%	38	61%
Still under treatment	11	45.07%	4	25%
Problem confirmed but treatment not advisable	19	58.0%	1	0
Problem confirmed but treatment not available	1	0	0	0
No finances or moved	8	25.0%	18	50%
Parent uncooperative	19	36.0%	34	47%
Error in coding	2	50.0%		
False positive	7	85.0%		
	134		132	

TABLE 6.9

Comparison of Diagnosis and Costs for Children Having more than $400 of Medicaid Paid Claims for Medical or Dental Problems either 12 months before Or 12 months after the date of screening

GROUP	Screen Finding	Major diagnosis before screening	Major diagnosis after screening	$ Before	$ After
Age 0-11 months					
Screened, no problems		Bronchitis	Bronchitis	701	54
		Respiratory/Virus	General Symptoms	526	1181
Screened, a problem	HB Type AC	TB/Respiratory	General/Respiratory	1117	406
	G6PD Absent**		Vit D Deficiency	1196	142
Unscreened			Bronchitis/Worms	511	1248
Age 1-4 years					
Screened, no problems		Ear Operation	Respiratory	1617	54
		Concussion	Ears/Respiratory	644	189
		Respiratory	Tonsillitis/Urin	28	629
Screened, a problem	Extra Ear Appen	Digestive/Resp	Bronchitis	1385	0
	Strabismus Eye	Wounds/Eye	Head Laceration/Eye	453	213
	Dental Only *	Respiratory	Respiratory/Colitis	132	857
	Vomiting	Respiratory	Respiratory/Eye	443	249
	Seborrhea Scalp	Skin/Bronchitis	Eczema	608	53
	Dental Only *	Urinary	Throat/Virus	1028	91
	Gait/Posture	Respiratory/Gastro	Pneumonia/Resp	267	972
	Dental Only *	Head Laceration	Tonsillitis/Ears	246	63
	Dental Only *	Resp/Fracture	Pneumonia/Hepatitis	775	980
Unscreened		Injury/Urinary	Nerv/GI/Respiratory	245	602
		Ear/Respiratory	Skin/Worms	94	1167
		Tonsillitis/Head	Ill Defined	1001	73
		URI	Bronchitis/Throat	78	942
		Pneumonia	Resp/Referred in Error	392	95
		Bronchitis	Bronchitis/Impetigo	136	14
		Throat/Eye	Tonsil/GI/Respiratory	355	578
		Ears/Virus	Ears/Respiratory	224	475
		GI/Respiratory		442	0
		Respiratory/GI	Respiratory/Eye/GI	179	452
		Hernia/Respiratory		659	10
Age 5-11 years					
Screened, no problems	Keloids Ear	Concussion	Skin Disease	349	2
		Resp/Radiology	Respiratory/Radius	181	445
		Urin/Respiratory	Eczema/Cold	57	23
Screened, a problem	Otitis/Rash	Personality/Foot	Ill Defined	123	402
	Vision	Respiratory	Respiratory/Eye/Flu	27	123
	Low HB	Eyes/Skin	Anemia/Face***	147	422
	Dental Only*		Epileptic	18	851
	Psych Eval	Tonsillitis	Tonsillitis/Wounds	410	136
	Hearing Loss	Ear/Throat	Ears	596	73
	Refrac Vision	Wound	Eyes/Epileptic	15	1364
	Small Stature		Tonsillitis	0	614
	Hear/Vis Loss	Tonsillitis/Elbow	Neurosis/Face	1071	217
		Eczema	Eczema	96	62
Unscreened		Joint/Skin	Gastroenteritis/Ears	677	139
		Exam/Respiratory	Deformity/Hay Fever	158	462
		Resp/Urinary	Skin	807	45
		Elbow/Mump	Respiratory/Epilepsy	14	76
		Hay Fever/Finger Lac	Respiratory/Wounds	99	282
Age 12-21 years					
Screened, no problems		Fractures	Fractures	124	1027
		Fracture/Wound		466	0
			Throat/Mononucleosis	0	145
Screened, a problem	Hear Los R Ear	Beliver Baby	Vaginal Infection	923	71
	Bilat Sublex**	Foot/Gland	Fracture/Leg/Eye	2060	181
	Dental Only*	Tonsillitis	Deliver Baby	57	1146
	Prim Enuresis		Urinary Surgery***	0	869
	Low HB	Intestinal Flu/Eye	Anemia/Flu	194	136
	A/S HB Type	Respiratory/Burns	Sprain/Skin	35	73
	Draining Sinus	Respiratory/Eyes	Stomach/Skin	69	891
	Hearing Loss		Deafness***	0	668
	Hypertension	Teeth	Hypertension	36	22
	Birth Control**	Baby/Rectal Problem		1021	0
	Vaginal Disch	Abort/Respiratory	Abortion/Injury	873	289
	Small Stature		Tonsillitis/Glands***	0	679
	Dental Only*	Tonsillitis	Brochitis/Flu	530	44
Unscreened		Tonsillitis/Ear			
		Respiratory/Urin	Respiratory/Abortion	82	609
		Penumonia/Stomach		939	0
		Bronchitis/Throat	GI/wounds	41	631
		Nervous/Blood	Nervous/Skin	1081	764
		Abortion/Eye	Abortion/Anemia	434	1669

*Dental Only indicates that no medical problems were found

**Areas where EPSDT could have resulted in reduced costs

***Areas where EPSDT probably led to short run increase in cost

problems. The G6PD case is a good example of the value of this type of asymptomatic screening as a preventive tool in Black children.

Problem seriousness was compared to study the impact on treatment costs. The only problem category where seriousness seemed to make a difference in costliness of treatment was dental. In total, eighty dental problems in the sample got to treatment and were given a seriousness rating according to the HSRI data system at an average cost of $88.94 per problem getting to treatment. There were only seventy-two dental claims for a total of $121.13 per claim with age specific costs of $98, $109, and $145 for age groups 1-4, 5-11, and 12-21, respectively.

In reviewing the eighty problems given seriousness ratings, it can be seen below that the severe dental conditions are nearly three times more expensive than mild conditions. Early detection and correction of dental conditions, coupled with a strong preventive program, could save considerable funds if the mild conditions could be treated and moderate-to-severe problems prevented.

Dental Seriousness	Number of Problems	Increase Dental $ (Std Deviation)
Mild	16	$39 (33)
Moderate	35	$91 (99)
Severe	29	$114 (130)

Additional details concerning the Medicaid payments will be presented in this section of the chapter for those children who were screened. The standard deviations are so high (due to the random fluctuation in high cost events) that it is difficult to make sound statistical statements about the meaning of the averages. In the sense that these were all the problems detected during a year, the averages indicate the true cost paid out; but inferring to a longer time is difficult. Any 95% confidence interval would encompass a range of the mean, plus or minus $50. This means no statistical difference between the "before" and "after" costs for any one detailed comparison is possible due to the small sample.

Perhaps the sample size should have been tripled thereby helping to achieve a possible statistical significance. However, the results are so similar to those seen previously by HSRI in state-wide data systems that the additional information would not add significantly to an understanding of the impact on Medicaid costs. The trends shown on Table 6.10 are important. The older the child population screened, the more likely an increase in total Medicaid costs for problems actually getting to treatment and having a claim paid---this is the case for both medical and dental problems.

Cost of medical conditions by newness and age were studied but are not shown here. Again, the standard deviations were too high and the sample too small to make statistical conclusions, but the trend was that those with conditions <u>not</u> previously under care were most likely to show treatment cost increases for children aged 1-21, with an average increase of Medicaid cost for <u>new</u> medical conditions of $40, (N=64, SD-150), and average decline of $30 (N=39, SD=400) and $150 (N=9, SD=300) paid in behalf of children with problems said to be "previously known, but not under care" and "previously known, under care" respectively.

TABLE 6.10

Per Capita Total Costs and Cost Changes for the Year Before and After the Date of Screening by Age Group and Problem Status.

AGE	N	TOTAL MEDICAL & DENTAL Before	After	Change	Changes in costs (After screening-before screening) Changes Medical Costs Only	Changes Dental Costs Only
Screened, No Problems						
0-11 Mo.	9	$185 (253)*	$253 (360)*	69	$68	$ 0
1-4 Yrs.	27	129 (323)	78 (130)	-50	-49	4
5-11	16	129 (157)	113 (157)	-15	-25	53
12-21	10	112 (201)	177 (328)	64	60	44
Screened, Had a Problem, Showed for Treatment					Medical Dollar Change	Dental Dollar Change
0-11 Mo	9	$335 (478)*	$163 (109)*	-173	$-173	$ 0
1-4 Yrs	43	149 (243)	127 (170)	-23	-41	23
5-11	47	103 (185)	181 (248)	78	59	47
12-21	33	194 (438)	267 (297)	73	-10	95
Screened, Had a Problem, Showed, Had a Claim					Medical Dollar Change	Dental Dollar Change
0-11 Mo	5	$297 (516)*	$142 (19)*	-155	$-155	$ 0
1-4 Yrs	15	120 (182)	114 (112)	-7	-30	23
5-11	23	99	229	130	121	44
12-21	17	208 (536)	294 (251)	86	43	55
TOTAL				$60	$38	

*The standard deviations are shown in parentheses. The standard deviations for the average differences are a minimum of 60 and otherwise approximately double the absolute value of the change.

Given the results in this section about Medicaid costs impact, it becomes clear that costs impact of Medicaid in any particular program will depend upon the number of new medical conditions that actually reach treatment and get a resulting claim paid, the number of mild, moderate and severe dental conditions that are present in the population, the number that get screened out of the total target population, and the extent to which the program can serve to prevent high cost conditions such as gastroenteritis, bronchitis, pneumonia, infections, severe tonsillitis, the impact of genetic anomalies (such as G6PD absence), pregnancies and abortions in the older group, and moderate to severe dental problems. It also will depend upon the availability of community programs for developmental, emotional and dietary problems. The health department, through public health nurses, absorbed much of the cost that would ordinarily be incurred in treating and counseling about iron deficiency anemia.

A "cost of treatment" planning document is included as Table 6.11. The major conditions found in Contra Costa are listed along with the percentage that were previously under care and a cost estimate of what it would take to treat the condition under the assumption of all children getting to care. Other programs could alter the rates of finding or the estimated costs, but according to the findings of this chapter, the cost estimate provided by such a technique would be a maximum estimate of the total impact on overall Medicaid treatment costs since the average ongoing total costs of medical care treatment are likely to change very little with a moderately successful EPSDT program. The major costs of EPSDT are in the areas of outreach, screening and

TABLE 6.11

CONTRA COSTA EPSDT
(March 1974 - March 1977)

Planning Estimates for Treatment Cost Estimates

Referrals, Number Treated, and Estimated Costs, Assuming 100% Follow-up
(out of 8,971 Health Assessments, 1/3 Medicaid and 2/3 non-Medicaid)
in 6,000 Children in East and West County

Referral (Where 1/2 the Children are Under Age 5)

Problem Category	Proportion Under Previous Care	Number Referred	Proportion Number & Unit Cost Not Needing Treatment Prop.	No.	Unit Cost	No. Treated @ 100% Follow-up	Cost Per Problem	Total Cost at 100 % Follow-up
Dental Caries	.05 for all caries							
Mild		346	.03	10	$15	335	$ 40	$13,400
Moderate		461		14	15	447	91	40,677
Severe		231		7	15	224	120	26,880
Very Severe		115		4	15	111	358	38,850
		(1,153)						
Anemia	.01	432	.09	39	10	393	25	10,215
Ear Problems	.06							
Ambulatory Trmt.		135	.04	6	10	129	25	3,285
Inpatient		10		1	10	9	1,000	9,010
Infective	.04	118	.13	11	10	107	20	2,250
Dermatological	.12	120	.04	5	10	115	30	3,500
Upper Respiratory Infections	.03	117	.03	4	10	113	25	2,865
Special Dental (Gingivitis, etc.) Malocclussion	.07	162	.03	7	15	155	200	31,000
Vision	.09							
Ambulatory (assuming screen clinic retesting)		100	.2	21	45	79	40	4,105
Inpatient		4	.25	1	25	3	500	1,525
Orthopedic	.14							
Ambulatory		87	.2	17	25	70	35	3,045
Inpatient		3		1	25	2	2,000	4,025
Allergy	.18	56	-	0	-	56	60	3,360
Ill-Defined	0	52	.1	5	10	47	100	4,700
Injuries	.04	35	.15	5	10	30	50	1,550
Genito-Urinary	.07	31	.14	4	10	4	150	1,200
						2	800	1,600
Heart	0							
Ambulatory		35	.15	5	20	30	35	1,155
Inpatient		3	-	0	-	3	1,000	3,000
Congenital Conditions	.08	26	.24	6	20	20	400	8,120
Menstrual/ Reproductive	.12	21	.23	5	10	16	50	850
Lower Respiratory Infections	.31							
Ambulatory		14	.1	1	10	12	30	400
Inpatient		1	-	0	-	2	1,000	2,000
Psychological/ Neurological	.06	26	.04	1	25	25	500	5,025
Unable to Classify Diagnosis	.05	13	.2	3	10	10	70	100
Obesity	0	16	-	0	-	16	200	3,200
Nutritional (Absent G6PD)	.06	13	.38	5	10	8	25	250
Other	0	12	.3	4	10	8	25	240
Hernia (Mostly Outpatient)	0	12	.3	4	25	8	500	4,100
Speech	0	10	.2	2	45	8	1,000	8,000
Neoplasms								
Ambulatory	.17	7	.25	2	35	6	300	1,870
Inpatient		1	0	0	27	1	700	700
Nervous System	.25	7	.29	2	35	5	300	1,570
Convulsive Disorders	.05	6	-	0	-	6	200	1,200
Severe Develop. Leg	0	10	.5	5	100	5	2,000	10,000
Enuresis	.25	8	.12	1	35	7	200	1,400
Thyroid	0	3	-	0	-	3	800	2,400
Perinatal	0	2	-	0	-	2	300	600
Hearing Loss	.3	3	.3	1	50	2	150	300
Lower Gastro-Intestinal	.2	5	.2	1	35	4	500	2,000
Pinworms	0	2	.5	1	10	1	25	25
Rheumatic Heart	0	2	.5	1	35	1	200	200
								$266,142

$266,142 ÷ 6,000 children = $44.36 per child over a 3 year period.

case monitoring, not in treatment, because the idea in screening is to review many children in order to find a few who are truly in great need of health care intervention with the idea of trying to establish measures to prevent future occurences in the normal population of the more severe conditions that are found. In this regard EPSDT is preventive and treatment costs should not be expected to require large expenditures.

Conclusions About Costs

The health department screening activity itself was shown to cost approximately $40-$50 per complete screen which includes immunizations given on site, conducting retests on the vision and hearing problems found in a screen, and rechecking problems that appear on the physical. The additional costs of outreach, follow-up, and minor on site treatment depend upon the desired rate of participation of the eligible population, but in the case of Contra Costa where a 30% participation rate was achieved and a 60-70% follow-up rate found, and minor on site preatment was performed, the other aspects were found to be approximately the same as the screening component.

The school screening was found to be approximately the same cost for outreach (planning included) and screening as in the health department clinics. However, if the volume at any one school could be increased, or parent involvement minimized, results such as those found in the Richmond Boys' Club Health Day would be obtained, wherein the cost per child screened for outreach and follow-up were less than half the regular cost.

Dental costs for each child getting to dental treatment and for whom a Medicaid claim was known to have been paid increased by $120 per child and the medical costs increased approximately $40 for each new medical condition reach-

ing treatment and getting a paid claim. However, since only half the children reaching treatment resulted in a paid claim and since the treatment rate was fairly low--60% for dental--and the referral rate was low due to a retest before referring policy, and only 30% of the eligible population was reached, the projected cost per eligible child was minimal. The severe dental problems were three times more costly to treat than the mild problems, indicating a cost benefit possbility in early treatment and prevention of severe dental cases.

One child in the sample with a G6PD enzyme deficiency had a large reduction in cost after the finding of the problem. The high cost items varied by age group and included bronchitis, gastritis, tonsillitis, pneumonia, fractures and pregnancy. Unless these can be prevented through a concentrated health program, the Medicaid cost will not show much decline since only a few children with high costs can distort the cost impact of other activities. The apparently random nature of the occurence of such problems means that high cost treatment will occur both before and after screening, so any cost changes resulting from EPSDT are obscured by the large dollar items. The pattern of care received, in children with problems, however, apparently shifted away from acute type problems to treatment of more chronic type conditions.

Cost planning estimates were provided showing that even if 100% of those needing treatment received it, the cost of treating screening discovered conditions would only be $44.36 per child, assuming the rate of findings found in Contra Costa, or $30 per screen[2] in a population with an age distribution with one half the children under age 5. Since, however, EPSDT is primarily a preventive effort, the costs of the outreach, screening, immunizing and follow-up should far outweigh the changes in cost of Medicaid reimbursed treatment.

[2] There were 8,900 screens and 6,000 children.

CHAPTER 7

SUMMARY OF SPECIAL STUDIES

Throughout the course of the project several evaluation studies were performed in order to determine the feelings and ideas of the clients, staff, and health practitioners to whom children were being referred. These studies include a client attitude survey, a referral provider survey, and a staff attitude questionnaire. These reports are available for interested readers from the Contra Costa County Health Department. The purpose of this chapter is to briefly describe and summarize these results.

Client Attitude

Personal interviews were conducted for both patients who showed and patients who didn't show in Richmond and Brentwood between May and July 1976. A total of 300 persons were interviewed, including 100 "shows" and 50 no-shows from each clinic area in Richmond and Brentwood. The interviews were completed an average of 25 days after the appointment date. Since the survey was completed at the time of the project closing in Richmond and Brentwood, only 29% of the sample were appointed for original screens (community workers were not stressing outreach).

Among the "shows", 95% said they would recommend the clinic to a friend and indicated as reasons, the "good service" (35%) and that the clinic was free (48%).

Among the "shows", 95% indicated that what they learned about their child's health was worth the time and effort spent getting to the clinic--because they wanted their child to stay and/or be healthy.

The median time to get to the clinic was 10 minutes with less than 7% more than 20 minutes.

Approximately 18% indicated they had to wait more than an hour until they were seen, but the median waiting time was indicated by clients to be 18 minutes.

A goal of the program is to teach mothers about a good screen, so 93% of the mothers said that someone explained to them what was being done while the child was being screened in Richmond and 85% were told in Brentwood. When asked who was most helpful at the clinic, 67% indicated either the doctor, the nurse, or both.

When the no-shows were asked to state reasons for missing their appointment, only 52 answered the question with the following responses:

Reasons for Not Keeping Appointments

Statement	Richmond Originals	Richmond Periodics	Brentwood Periodics
Sample Size	11	26	16
"Other things to do"	45.5%	34.6%	6.3%
"Forgot"	27.3%	15.4%	12.5%
"Didn't know had an appointment"	9.1%	15.4%	37.5%
"Child sick"	9.1%	3.9%	18.8%
"Lacked transportation"	9.1%	3.9%	12.5%
Other	0.0%	11.5%	12.5%

The non-English speaking were more likely to say they didn't know about the appointment and the single mothers with more than four children were more likely to say they forgot. Even though reminders are routinely sent, perhaps special reminder efforts are needed for these two groups.

The mother or guardian was with the child in the clinic 94% of the time in

in all but Richmond original screens, where 12% were there with a relative and 7% came alone.

A comparison of shows and no-shows showed that:

Richmond originals are more likely to show if:

a. mother is married
b. mother is employed
c. mother has family dentist now
d. mother had checkup during last year.

Richmond periodics are more like to show if:

a. two or less children are in home
b. mother is married
c. mother is less than 25 years of age
d. mother had checkup in past 18 months.

Brentwood periodics are more like to show if:

a. there are three or less persons in home
b. mother is less than 26 years of age
c. mother attended college (20% versus 10%)

Study of Health Service Provider Opinions

Two studies of the opinions of health service providers were conducted. The first was in May and June of 1975 where 150 questionnaires were sent along with the referral form for children having conditions requiring referral to outside providers. The second was for 128 children referred between February and May 1976. The first questionnaire resulted in 58 returns and the second in 54.

When asked if clients brought sufficient information from the referral clinic, 95% said yes. Those who said no wanted the results of the screening audiogram, lab results, and the name of a person at the clinic to talk to about the client.

It was indicated on 70% of the returned questionnaires that the referral was necessary. The rest said that the child was referred too soon or the condition was not serious enough.

Of the returned questionnaires, 98% thought that the patient had been referred to the proper agency or office.

Dentists responding to the questionnaire indicated extreme problems with broken appointments and suggested that the clinic take a more active role in direct assistance to ensure that clients keep appointments.

Overall, the providers gave very positive responses to the questionnaire and were pleased with the screening program.

Staff Attitude Study

The EPSDT staff completed a questionnaire about their job satisfaction and ideas about and for the program. This study is included as Appendix U because it could provide insight to a clinic manager on some of the concerns of the staff for a project like this. The results of the survey, which was administered in June 1975, showed that the participating nurses felt that the work they were doing was important to them and that they were very satisfied with the work experience in the project. Nurses had a strong role in the project and it should be recognized that EPSDT is primarily a nursing program. Staff members felt satisfied with their supervision, but desired more input to the planning process.

The CHW (Community Health Workers) and nurses both indicated that the activity they perform which is least helpful in reaching project goals was paper work. This indicates that care must be taken to minimize paper work for these two groups. It is for this reason that clerks were added to the clinics and efforts are now under way to obtain maximum computerization/automation of the paper work possible.

A large number of nurses saw health education as their role, but, as described

earlier in this report, this turned out to mean different things to each nurse. It probably referred to such things as instructing the mother on how to prevent severe diaper rash, how to prevent anemia, diet planning, etc.

All participating staff members felt that the project was needed--they saw children in need and felt the children were being helped, but felt that they weren't getting sufficient feedback on accomplishments and requested monthly reports of the degree of follow-up on problems detected. This function, then, becomes an important part of an EPSDT data system.

A problem that surfaced in the study was that, in a single clinic setting, there were conflicting chiefs. The nurses took their guidance from nursing service instead of the project coordinator. This problem was helped by better communication with the nursing service. A nursing service liaison (a nurse) was added to the Community Health Service section to facilitate communication of policies and resolution of problems with the nursing service.

Conclusion of Special Studies

The special studies provided information that, in terms of client satisfaction, staff satisfaction and physician participation in treatment, EPSDT is well-liked by persons closest to the program operation. Many times policy decisions about a program are made without such input. If those closest to the children are convinced that the program is useful and workable, then those with more distance from the actual operation should be pleased that a federal program is reaching the people and serving a need.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

The overall conclusion is that a county health department, if given sufficient funding and flexibility, can carry out a very successful EPSDT program to include outreach, screening, and follow-up to ensure treatment and updated immunizations. Liaison workers in the social services department a liaison nurse to communicate program policy to nursing service were found to be essential components to guarantee smooth operation after the county health officer has stated full support for the effort.

Nurse practitioners, supervised by a Pediatrician, were effectively used to screen over 70% of the 12,000 children given nearly 20,000 screens between March 1974 and May 1977 with the rest screened by M.D.s (primarily Pediatricians). Adequate reimbursement for the program conducted in the county should total to approximately $40 per completed screen (including an office visit fee paid for retests of borderline cases in vision and hearing) and at least an equivalent amount for conducting outreach and follow-up services including minor on-site treatment. There was very little impact on the total Medicaid treatment costs actually paid. The statement of major conclusions and corresponding recommendations will follow the order of presentation in the report. A separate summary report also offers a set of recommendations which are organized in a somewhat different fashion to address questions of interest to the national program

Staffing the Screening Clinic

The average clinic had two to three exam rooms, and therefore the staffing had to be limited to one M.D., one or two Nurse Examiners (Pediatric Nurse Practioners), one clerk, and one aide, and one registered nurse or Public Health Nurse, with an average number of seventeen screened per clinic. The optimum size staffing for the most cost effective screening was shown to have another nurse

practitioner and another R.N., but this would require clinics with at least four exam rooms, and capable of handling a large volume of children (16 per hour).

There was considerable variation in the show rate for any one clinic between 35% and 78 % showing. Having public health nurses available to be on-call helped in minimizing staff waiting time, but still the fixed number of staff required meant that when the show rate was low, the staff waiting time was quite high.

The dual screen study in which 252 children were given a physical by both the doctor and the nurse examiner in random order showed that the nurse examiners can effectively supplement the physician screener with little fear of excess false negatives.

The nurses were accustomed to the well-child clinic operations wherein they operated relatively independently. The staff attitude study showed that when aides are used for clinic and follow-up purposes, and when nurses are used in the examiner role, communication and cooperation must be facilitated through additional time for group planning, case reviews, and inservice training--especially during the initial years of project operation.

Recommendation: In setting reimbursement rates, a state agency should determine full costs of operating optimum staffed clinic, make some assumptions about the level of show rates (50-60%), and the availability of space in locations near the children, and then set reimbursements for staffing accordingly. If other facilities would like to screen, they should work out ways to do so within a cost range close to this optimum size. However, this fee should recognize the time required for planning, coordination, and education, rather than assuming that the staff should be able to produce a screen every 20-30 minutes on the average each day. As pointed out in the cost section, a fee that resulted in revenues of

$35-40 per complete screen should be sufficient to cover the costs of screening. In the project, the staff spent as much time setting up the clinic and waiting as they did screening children.

Time Required for Screening

The total screen required, on the average 80 minutes--equally divided between waiting and direct service time. The service time varied with the type of screening visit (original, periodic, recheck), the location, and the day of the week. The waiting time varied by type of screen, time of arrival, whether the screen was scheduled or walk-in, and specific days. The up-front waiting time was 5 to 15 minutes on the average, allowing time for possible use of health education, video tapes, etc., only if they were given in 2-3 minute segments. Some printed health education materials would be helpful for mothers waiting while the child is waiting to be seen for the first procedure.

Recommendations:

Potential users of the clinics should be made aware of the time screening will take, and ways that the total time per child involved could be minimized such as bringing more children at once, and scheduling an appointment.

Variability in rates of "no shows" caused problems in staffing and waiting times. The solution developed by the clinic was to appoint only during popular hours (not 8:00-9:00 in the morning!) and have some public health nurses "on-call" so that overbooking (very seldom had more than 80% show) can be successful. A "paper clinic" where the parent visits the clinic two or three days prior to the screen in order to complete the paper work worked for selecting clients who were motivated to attend, but this is not a successful way to maximally penetrate the unmotivated population.

The variability in show rates leads to less than optimum staffing. The variation in show rates by clinic and hour,and the resulting patterns of methods to reduce the variability should be studied by each clinic in order to contain costs.

Outreach

In terms of individualized outreach, the intensive personal contact by indigenous community workers allowed to work early evening, provide transportation when needed, and use whatever methods they think best for recruiting a client was the most effective technique of recruiting persons for the clinic (30 - 44% eventually show), and insured that health education was received when the need was seen in the home. A letter sent with a specific appointment date, signed by the AFDC eligibility worker who knows the mother, followed by a reminder just prior to the clinic, and further followed by a phone call or a note when the appointment is broken, is also quite effective and would be a useful technique if a large population is to be reached on a small budget (13-19% eventually showed). When brief personal contact visits or letters with no date were sent, less than 5% families responded to the outreach approach.

With respect to organizational efforts, a full time social services liaison worker assisted in communication with social services. Efforts to work with schools to screen the unscreened children for free resulted in children getting screened, and efforts to work with youth organizations produced good results. The school screening is only cost effective, though, if a large volume (more than 80 to 100 per school) can be reached with limited personal contact with parents. Also, it cannot be cost effective for the health department to do only those children with Medi-Cal unless the reimbursement regularly covers the cost of outreach and screening

and the screening agency is allowed to screen non-Medicaid children. Local flexibility is needed in ways to achieve a high Medi-Cal penetration with a given budget. That is, a local EPSDT unit must be allowed to screen whomever they want just as long as the high proportion of Medicaid eligible children are seen within a limited budget.

Recommendation: Encourage use of intensive personal contact by indigenous community aides to do health education to stimulate screening activity. The aides must be carefully supervised, but given maximum flexibility in terms of methods and working hours in order to be effective. Mere personal contact is not sufficient. A great deal of interaction is required (planning figure of five hours per family to finally show for screening). If letters are used, there should be a specified date and time of appointment, and it should be followed by a reminder prior to screen. Then a different method of outreach (phone call, home visit) than was used the first time should be tried after the first broken appointment.

Local EPSDT units must be funded in such a manner as to allow interagency transfer of funds to conduct cost-effective organizationally oriented screening (schools, social services, clubs). That is, many Medi-Cal children can be screened cost effectively if non-Medi-Cal children are screened along with them, but if the Medi-Cal children need to be separated, too much time and effort is required.

Screening

The need for a particular screening step varied by age group and location in the county, and seemed to reflect that complete screening can be conducted without doing all procedures each time. The phenylketonuria (PKU) for children less than one year of age, and the urinalysis tests were frequently not given, even though needed, because the urine specimen is difficult to collect from small children.

However, the rate of true findings is so low that the procedures should be dropped as a routine screen in Contra Costa County.

Recommendations: Allow local EPSDT units to drop selected screening procedures that show low yield in a particular community. PKU tests should be required to be recorded on the birth certificate when the child is born in a hospital. Then, screening for PKU would only be for infants not born in a hospital. Criteria need to be considered for determining when a urine specimen is needed.

Types of Problems Found

The most frequent findings are dental, vision, hearing and anemia. The referrals for vision and hearing can be cut by one-half through a "retesting before referring" policy, but the reimbursement policies currently in the State do not recognize the value of such a service.

Other findings indicated that at least five referrals per month were made to Crippled Childrens' Service. In East (Brentwood) and West(Richmond) County along there were 2,733 referrals to all health agencies between March 1974 and May 1977, and, of these, 48.8% were rated as moderate to severe, only 5% were already under a treatment plan when the problem was detected, and only 6% were found to be false positive in the opinion of the health practitioner to whom the child had been referred. Areas with high rates of false positives,,or, referrals of confirmed conditions for which no treatment was necessary included pinworms, thyroid, vision, heart murmurs, genitourinary, and enuresis.

Recommendations: Reimbursement method needs to account for return visits necessary to eliminate referral of false positive conditions (particularly for vision and hearing) by at least paying the equivalent of an office visit for a screening retest.

Follow-Up

The follow-up of conditions found in screening required case reviews on a weekly basis. The lack of dental treatment money for non-Medi-Cal children in the project made the overall treatment rate look fairly low at only 53% successful resolution. However 65% of the medical problems, and 57% of the dental problems of Medi-Cal children were successfully resolved. The treatment rate for dental problems was 85% in Central County, and 55% in East and West County with the higher rates in Central County due to the families greater experience with, and availability of, dental care. Once medical conditions got to diagnosis, 90% completed treatment.

Recommendation: Health Departments can provide a viable EPSDT model due to high rates of medical treatment received after screening (especially for severe conditions), but dental treatment requires special attention. Children need preventive help at an early age to avoid the magnitude of referrals that are generated, and EPSDT programs need to find innovative ways to get children to show for treatment and keep dental appointments such as on-site dental treatment, or contract dentists who will work on small groups during a specified block of time when the aides could help bring the children.

Factors Affecting Screening Findings

Age and ethnicity are, by far, the most important factors which were related to the rate of referrals in a target population. In Contra Costa, the older children had much greater frequency of findings, and the Black children had the highest referral rate.

Medi-Cal children, in general, had more referrals and findings than non-Medi-Cal eligible children, indicating that the Medi-Cal focus of EPSDT is accurate for prioritization of funding. Only among the Mexican Americans in the clinics did the Medi-Cal and non-Medi-Cal children have similar problems.

Previous utilization of dental services meant less dental problems found and referred, but otherwise, previous use of health services made no difference in the referral rate. In fact, those with greater use of the emergency room type services were more likely to have a problem needing referral.

The rates of referral varied little between original and periodic screen for those children having more than one screen, regardless of age. However:

1. The children with more referrals on the initial screen were less likely to return to the health department for periodic screens regardless of age at the time of the initial screen.

2. The children who got the problems treated after the first screen had less of the same problem.

The seriousness of referred conditions was only slightly lower on the periodic screen--indicating that periodic screening is needed because as children age, new conditions appear.

Analysis of the Nine-point Healthiness Rating assessed at both the original and periodic screen showed that the greatest gain in healthiness between the original and periodic screen came in the 1-11 year age group.

Recommendations: Under limited funding, focusing on Medi-Cal children appears to be the best way to maximize problems found. Since dental health care utilization is so responsive to income, it should be expected that very low income children (Medi-Cal) would have more dental problems. An interesting note, however, is that even though the rates of findings among Central County (White) children were quite low, the rate of treated conditions were similar to the Black population in West County because of the much higher show rates for treatment.

Dental follow-up and prevention needs rapid and innovative demonstration. Excluding children from screening due to previous visits to their physician does not seem to be a workable way to maximize screening referrals per dollar spent.

Since the greatest gains in healthiness occurred in the 1-11 year old age group, perhaps this age group should get the greatest priority of screening effort.

Client Attitudes

A client attitude survey showed clients to be pleased with the program once they came to the clinic and definitely felt like the time involved was worth the effort.

Referral Practitioners' Attitude

Most persons to whom children were referred were pleased with the activities of the project. Major suggestions included sending more information with the child to the referral physician, including the name of the case monitor in the health department, and that more intensive follow-up be done to ensure that clients keep their dental appointment.

Recommendation: Include lab results and sufficient information to the practitioner to whom the child is referred--along with a name of a person the practitioner can talk to concerning the child's problem.

Staff Attitudes

The nurses were highly satisfied with their role as the primary examiner and health educator. They felt that the job was rewarding because they saw children in need that had a possibility of being helped.

Both nurses and community workers wanted a larger role in planning, more feedback from the data system on problems treated as a result of their efforts, and definitely less paperwork.

Recommendations: There is a need for data feedback on a timely basis to nurse examiners and community workers. This requires a screening sheet and a problem sheet, but the paperwork expected from the nurses and especially the community workers must be minimized. Exit clerks to review the forms for accuracy and simplified forms and data input systems are important to successful management of the program.

Costs: The costs of the program were estimated from actual expenses, staffing ratios, and staff activity reports. The precise figures vary according to the type of costs considered, but it appears that if a program could estimate the number of children they would like to completely screen out of the total population, then a funding of at least $40 to $50 for each child to be screened is necessary for the screening activity. The precise cost of outreach will depend upon the policies of the organization, who does it, and the techniques used.

In Contra Costa, the cost of staffing up to perform the outreach, follow-up, and onsite treatment of minor conditions was approximately the same as the screening cost.

The treatment Medicaid paid claims cost showed little change between the year before and the year after screening because there are several high cost conditions that appear randomly regardless of screening, and the rate of claims paid for the treatment rendered was only 50%. When there was a claim paid and the child needed and received treatment, the dental cost increase from the previous year was an average of

$121 per child with a paid claim; and when a new medical condition was treated and had a paid claim, the cost was $60. As pointed out in Chapter Six, however, the rate of paid claims per child screened and especially per eligible child for screening discovered conditions was quite low.

The areas of dental and G6PD (enzyme deficiency) shows potential for cost benefit in a screening program because the cost of treating a severe dental problem was more than twice that of mild problem and a child with G6PD enzyme deficiency discovered in screening experienced a large reduction in expenditures after screening--due to the discovery of the problem.

High cost items in the paid claims files included pneumonia, fractures, gastroenteritis, tonsillitis, and deliveries and abortions. Unless EPSDT can prevent such problems from occurring, large reductions in Medicaid costs will not be possible in the short run.

Recommendations: Budget analysts must realize that the treatment cost is a relatively minor cost in the full EPSDT program and even more minor in relation to all Medicaid treatment costs.

If EPSDT is to be effective in preventing long term problems, the recruitment and screening ,(i.e. outreach) and follow-up components must be well funded.

Significant short term reductions in Medicaid claims payments can only be obtained through preventive interventions to reduce hospital admissions for gastroenteritis (and failure to thrive), pneumonia, tonsillitis, and deliveries and abortions. Activities need to be targeted on children and youth who are high risk for these problems.

This report contains many more details than can be reported in this Summary Chapter, but every attempt has been made to provide the data on the operational patterns which led to the foregoing conclusions throughout the rest of the report.

We have tried to show that EPSDT is a viable program that has the support of clients and staff and finds conditions that need to be referred and treated.

Chapter 4 contains several lists of the conditions found and treated, and Chapter 7 describes the costs. The true cost benefit of such an effort cannot be estimated in an experimental way with such data, but a review of the conditions lead us to be excited about the potential (especially for children between the ages of 1 and 11). Suggestions have been made in this chapter for increasing the probability of reaching that potential within a county health department setting.

Contra Costa County, California

EPSDT Demonstration

1973--1977

FINAL REPORT

APPENDICES

A--U

June 1979
(Final Revision)

TABLE OF CONTENTS

APPENDIX A

Crippled Children's Services

Problems Serviced in June, 1976

TOTAL OPENED - - - 79 (TOTAL SERVICES 98)
Total Cases Closed 83
New Cases Opened - 72 (CCS 38 - MediCal 34)
Cases Reopened - - 7 (CCS 6 - MediCal 1)
(New Services 19 CCS 12 - MediCal 7)

ORTHOPEDIC 12

CCS 9
Adactyly 1
Orthopedic Eval. (paraplegic) 1
Equip. Only (C.P.) 1
Scoliosis 1
Poss. Hip Dislocation 1
Lordosis 1
(Reopen)Cerebral Palsy 1
(New Serv)Cong. Malformation, lower extremities 1
(New Serv)Eval. of Knee Pain 1

MediCal 3
Poss. Hip Dysplasia 2
Poss. Tibial Torsion 1

MISCELLANEOUS 21

CCS 11
Hemophilia 2
Poss. Lead Poisoning 2
Bowel Obstruction, Perforated Stomach 1
Post-Meningitis w/Neurological Complications 1
Acute Lymphoblastic Leukemia 1
Poss. Recurrence of Brain Tumor 1
(New Serv)Dental Eval. & Treatment (heart defect) 1
(New Serv)Pediatric Care in Community 2

MediCal 10
Necrotizing Enterocolitis 1
Left Diaphragmatic Hernia, Absena left Diaphram, Hypoplastic left lung, etc. 1

Miscellaneous continued

Embryoral Carcinoma w/Metastases 1
Sickle Cell Disease 2
Cystic Fibrosis 1
Neuroblastoma of Abdomen 1
Poss. Lead Poisoning 1
(New Serv)Pediatric Care in the Community 1
(New Serv)Anomalous Artery, left lower lobe lung 1

CARDIAC 1

CCS 4
Poss. Cardiac Defect 3
(Reopen)Complex Cong. Heart Defect, Tetralogy of Fallot 1

MediCal 8
Poss. Cong. Cardiac Defect 3
Poss. Cardiac Defect 1
Cong. Heart Disease 1
(New Serv)Cardiac Consult. 2
(New Serv)PDA 1

HEARING 1

CCS 7
Poss. Hearing Loss 3
(Reopen)Poss. Hearing Loss 1
(Reopen)Hearing Loss 1
(New Serv)ENT Care 2

MediCal 5
Serous Otitis Media 3
Serous Otitis Media, hearing loss 1
(New Serv)Poss. Hearing Loss 1

(continued page 2)

TOTAL AUTHORIZATIONS ISSUED 386 (CCS 217 - MediCal 169)

X . . .	113	RX . . .	122	DX Hosp.	9	RX Hosp. 90	Ancil.Serv. 52
CCS	63		70		4	50	30
M.Cal	50		52		5	40	22

Dr. Wood Dr. Sehring Sue Hayes, PHN Norma Kruse, PHN

I 11

CCS 9
Strabismus 3
Poss. Strabismus 4
(Reopen)Poss. Strabismus 1
(New Serv)Opthalmology follow-up 1

MediCal 2
Poss. Strabismus 1
(Reopen)Cong. Cataracts 1

PLASTIC 2

CCS 2
Cleft Palate 1
(Reopen)Re-Eval. Cleft Palate 1

MediCal 0

ORTHODONTIC 11

CCS 4
Malocclusion 4

MediCal 7
Malocclusion 7

LEUKEMIA 0

CCS 0

MediCal 0

RDS/HMD 2

CCS 2
RDS 2

MediCal 0

NEUROLOGICAL 9

CCS 5
Poss. Cerebral Palsy 1
(New Serv)Neurological follow-up 3
(New Serv)Neurological Eval. 1

MediCal 4
Poss. Neurological Problem (old head injury) 1
Poss. Spinal Cord Tumor 1
Poss. Brain Tumor 1
(New Serv)Poss. Neurological Problem 1

G.U. (Kidney & Bladder) 3

CCS 1
Poss. Posterior Urethral Valves 1

MediCal 2
Hydroureteronephrosis, Severe 1
Hypospadius 1
Polycystic Kidney 1

NEUROMUSCULAR CLINIC ONLY 3

CCS 2
Therapy Only 1
N.M. Clinic 1

MediCal 1
N.M. Clinic 1

a. SUMMARY ESTIMATE OF COSTS BY OBJECT FOR APPROVAL PERIOD 6

OBJECT (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL ESTIMATED COSTS (5)
A. PERSONNEL *(Enter Totals from Item 10)*	106,210		35,395	141,605
B. TRAVEL *(Enter Totals from Item 11)*	7,500		2,500	10,000
C. CONSUMABLE SUPPLIES *(Enter Totals from Item 12)*	10,500		10,500	21,000
D. EQUIPMENT *(Enter Totals from Item 13)*	10,550		10,550	21,100
E. OTHER EXPENSES *(Enter Totals from Item 14)*	61,430		27,570	89,000
F. EVALUATION *(Enter Totals from Item 15)*	7,000		7,000	14,000
G. ASSISTANCE COSTS *(Enter Amounts from Item 16, See Instructions)*				
H. TOTAL COSTS *(Sum of Lines a–g)*	203,190		93,515	296,705
J. LESS: ESTIMATED Revenues* *(Enter Amounts from Item 17, Line E, Cols. (1) Through (4))*	-41,400		-18,600	-60,000
K. NET ESTIMATED FUNDING REQUIRED *(Line H less Line J)*	161,790		74,915	236,705

REMARKS

*We estimate present EPSDT fee schedule will provide $60,000 revenue from children served by project. Equipment costs (Item 13) are non-recurring.

10. SCHEDULE OF PERSONNEL COSTS

POSITION TITLE/GRADE/ANNUAL SALARY (1)	% TIME ON PROJECT (2)	REGULAR FEDERAL SHARE FUNDS (3)	STATE FUNDS (4)	SPECIAL FEDERAL PROJECT FUNDS (5)	TOTAL (6)
Project Director	100%	$ 9,173		$ 3,058	$ 12,231
Licensed vocational nurse	100%	3,908		1,303	5,211
12 Community Health Workers	100%	45,765		15,255	61,020
1 1/2 Intake Social Workers	100%	7,665		2,555	10,220
Lab technician or equivalent	100%	9,780		3,260	13,040
2 Intermediate Typist Clerks	100%	8,308		2,762	11,070
1 Accountant Clerk	100%	4,361		1,453	5,814
Overtime	100%	2,250		750	3,000
FRINGE BENEFITS @ 17.5%		15,000		4,999	19,999
TOTAL PERSONNEL COSTS		106,210		35,395	141,605

REMARKS/EXPLANATION OF FRINGE BENEFIT RATE

17.5% standard rate for county employees

11. SCHEDULE OF TRAVEL COSTS

ITEM (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL (5)
In county	6,000		2,000	8,000
Out of county	1,500		500	2,000
TOTAL TRAVEL COSTS	7,500		2,500	10,000

12. SCHEDULE OF CONSUMABLE SUPPLIES COSTS

ITEM (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL (5)
Immunization supplies	5,000		5,000	10,000
Medical supplies	5,000		5,000	10,000
Office supplies	500		500	1,000
TOTAL CONSUMABLE SUPPLIES COSTS	10,500		10,500	21,000

13. SCHEDULE OF EQUIPMENT COSTS

ITEM (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL (5)
6 Examination rooms	2,850		2,850	5,700
Dental screening equipment	1,750		1,750	3,500
Laboratory equipment	4,950		4,950	9,900
Office equipment	1,000		1,000	2,000
TOTAL EQUIPMENT COSTS	10,550		10,550	21,100

14. SCHEDULE OF OTHER COSTS

ITEM (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL (5)
75/25				
Medical Consultation				
Physician @ $14/hr.	10,500		3,500	14,000
Equiv. 160 hrs/wk. Public health nurse	38,500		14,500	53,000
Other medical consultation	3,180		320	3,500
50/50				
Rent, maintenance and security	4,000		4,000	8,000
Transportation	3,250		3,250	6,500
Telephone	2,000		2,000	4,000
TOTAL OTHER COSTS	61,430		27,570	89,000

15. SCHEDULE OF EVALUATION COSTS

ITEM (1)	REGULAR FEDERAL SHARE FUNDS (2)	STATE FUNDS (3)	SPECIAL FEDERAL PROJECT FUNDS (4)	TOTAL (5)
Evaluation consultant contract	7,000		7,000	14,000
TOTAL EVALUATION COSTS	7,000		7,000	14,000

17. SCHEDULE OF ESTIMATED UNENCUMBERED FUNDS

10

	REGULAR FEDERAL SHARE FUNDS (1)	STATE FUNDS (2)	SPECIAL FEDERAL PROJECT FUNDS (3)	TOTAL (4)
A. CURRENT BUDGET				
B. ACTUAL EXPENDITURES MADE THROUGH *(Insert Date)*				
C. ESTIMATED ADDITIONAL EXPENDITURES FOR REMAINDER OF CURRENT PERIOD				
D. TOTAL ESTIMATED EXPENDITURES FOR CURRENT PERIOD *(Add Lines B and C)*				
E. ESTIMATED UNENCUMBERED FUNDS *(Line A Minus Line D)*				
F. REMARKS				

18. SCHEDULE OF ESTIMATED COSTS FOR FUTURE YEARS OF DEMONSTRATION PROJECT

(Projects will generally not be considered if they require longer than 3 years to complete. Approval to carry out the project beyond the current approval period depends upon the receipt of satisfactory progress reports and a continuation request on Form SRS-ORD-180. Progress reports are due as required by SRS (See instructions item 20, paragraph 5). continuation request is due not later than two months before the end of the current approval period.

A. Estimated total duration of project: Beginning 10 Mo. 1 Day 73 Yr. Ending 9 Mo. 30 Day 76 Yr.

B. Estimated total cost of project: 2nd Year. .$ 237,165 3rd Yr. .$ 260,881

C. Estimated state funds 2nd Year. .$ _____ 3rd Yr. .$ _____

D. Estimated special Federal project Funds grant request: 2nd Year. .$ 70,801 3rd Yr. .$ 77,881

E. Current approval period _____

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DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
SOCIAL AND REHABILITATION SERVICE

PROJECT NO. (Leave Blank)

19. PROJECT SUMMARY

SUBMITTED TO: SOCIAL AND REHABILITATION SERVICE, WASHINGTON, D.C. 20201

TITLE OF PROJECT

Demonstration of Implementation of EPSDT Program in Two Model Areas (Urban and Rural) in Contra Costa County, California

GIVE NAMES AND OFFICIAL TITLES OF THE PROJECT DIRECTOR, AND ALL OTHER PROFESSIONAL PERSONNEL

Robert E. Jornlin, Director
Human Resources Agency
Contra Costa County, California

NAME AND ADDRESS OF APPLICANT AGENCY OR ORGANIZATION

SUMMARY OF PROPOSED WORK — *(200 words or less — omit confidential data)*

In the Science Information Exchange, summaries of work in progress are exchanged with government and private agencies supporting research in the sciences and are forwarded to investigators who request such information. Your summary is to be used for these purposes.

In 1967 the Congress expressed its concern over the adequacy of health care services for children by amending Title XIX of the Social Security Act to require States to establish an Early Periodic Screening Diagnosis and Treatment Program for all eligible children. The regulations of the Department of Health, Education and Welfare implementing this statutory requirement place emphasis on integrating all relevant professions and facilities into a service delivery system supported by community workers who provide outreach, community liaison, and follow-up.

Contra Costa County has had substantial successful experience in developing integrated human service systems and, specifically, in conducting in the Richmond Model City Area a Health Care Outreach Project which seeks out families who are isolated from medical care and assists them to obtain needed care.

This proposal is being developed within the Human Resources Agency, using the staff and facilities of the Health, Medical Care and Social Service Divisions of that Agency. It will be based initially in Richmond and the Brentwood-Oakley area of the Eastern part of the County. These two areas have been selected to provide a comparison between the type of program effective for a densely populated urban poverty area and a sparsely populated rural poverty area. In both areas integrated service delivery systems are already at some stage of development. The Project will include provision for evaluation of the cost effectiveness of such a program and its impact on the health status of the population being served.

SIGNATURE OF PROJECT DIRECTOR: Robert E. Jornlin

OR ORGANIZATION: Human Resources Agency

DO NOT USE THIS SPACE

TABLE OF CONTENTS

NARRATIVE

Purpose:

To provide a demonstration in comprehensive early and periodic screening, diagnosis and treatment program for children in two target areas, urban and rural, through a service integration approach.

Goals and Objectives:

Long range goal

I. Improve the quality, access, utilization and follow-up of pediatric health care services in the target areas.

Short range goals and objectives

A. Develop one-stop service models for delivery of comprehensive screening with linkages for diagnosis, and treatment of children in the target areas.

1. Recruit and enroll children for screening in the two target areas by June 30, 1973 for minimum of 4000 screening visits.

2. Provide or refer for diagnostic services any children discovered in screening to need further examination.

3. Provide limited on-site outpatient treatment for families electing this care.

4. Provide team care for multiproblemed or difficult problem clients.

B. Increase program effectiveness through a monitoring (tracking) and case management system

1. Develop record system (including intake, medical history and record forms, referral and follow-up records).

2. Develop cooperative agreement with private health providers to participate in EPSDT program.

3. Train community health workers to perform case management functions

a) provide outreach and health services information to all target area residents through face-to-face contacts, group meetings and

media presentations to recruit 4,000 children for screening services

b) develop service plans with primary health care team

c) provide facilitation services to enable clients to receive care

e.g. transportation

health education

translation

child care

motivated family counseling

d) monitor and provide linkage for children referred for diagnosis or treatment to determine if services were obtained and if conditions were ameliorated

e) document and enumerate all services provided

children referred for screening

type of facilitation service provided

children monitored through health system

conditions detected and ameliorated by health system

4. Increase pediatric clinic show rate by 25%

C. Develop linkages and coordinate private and public child health services in the target areas

1. Begin Joint health planning

2. Negotiate contracts or agreements with health care providers (public or private) for cooperative case management (outreach, information, referral, service delivery and follow-up and other operating procedures)

3. Provide ancillary health care services (outreach, facilitation and follow-up) for all participating vendors

4. Include private and public health care providers or advisory committee

D. Increase citizen participation in design and delivery of health care services

1. Establish two health care advisory boards composed of vendors, lay citizens and consumers of service by February 1974.

E. Increase knowledge of hygiene in target areas

1. Provide general community wide health education through media presentations, group meetings, health happenings and other community oriented vehicles

2. Provide in home family oriented health education around specific family problems for 1000 families in the following areas:

- •home accident prevention
- •respiration disease
- •infant care
- •cancer
- •heart disease
- •drug abuse/alcoholism
- •family planning
- •importance of regular examinations
- •good nutritional practices

3. Develop short basic information form to test efficacy of health education (before-after test design)

a) # parents receiving health education in one year

b) # parents increasing their health knowledge in one year

F. Document services for cost-benefit analysis of the two target areas

1. Develop performance standards for staff

2. Document all service costs i.e., drugs, facilities, equipment, personnel

3. Document and enumerate all services provided

4. Process information to determine

a) # children screen/$

b) # children diagnosed/$

c) # children treated/$

d) # of illnesses or developmental disabilities detected/$
e) # of conditions treated or ameliorated/$

2. Innovative aspects of the proposed program include:

- Comprehensive screening, diagnosis and treatment available for families electing the service at two local one-stop children's clinics (rural and urban).

- Target area coverage for the screening service which will allow provision of services to frequently neglected medically high risk groups such as migrant workers, the under employed working poor as well as those covered by Medicaid, (permitted under Title XI Section 1115B of Social Security Act as amended 1967)

- Maximum utilization of community health workers for outreach, direct services, increasing health care utilization, and following up to monitor children through available health care systems.

- Integrated service delivery model coordinating public health, medical services, social services, schools and other health services for maximum effectiveness and efficiency in the delivery of EPSDT services.

- Citizens advisory board composed of physicians or other health care providers , lay community residents and consumers of services to increase the participation of citizens in the design and delivery of health care services

---

- Designation of two pilot areas for the testing of EPSDT to demonstrate the efficiency of the program on two diverse areas--Richmond:

a predominantly black urban ghetto with low average income level; Brentwood-Oakley: a rural low income agricultural area with high proportion of Mexican-Americans in the population.

Comprehensive screening, diagnosis and treatment services

Comprehensive screening diagnosis and treatment services will be provided in two target areas. The purposes of screening are: 1) to identify specific medical conditions and provide appropriate care and 2) to enter children and families into gener medical care on a comprehensive (prevention, primary and acute care) and continuous basis.

Health care for children in low income areas has traditionally been oriented toward acute-care of sick children and overall care of children with chronic diseases. This is true from both a consumer and provider perspective. EPSDT will emphasize comprehensive preventative care for low income groups that now receive it the least.

The screening services in the following list include three procedures not part of the State of California guidelines for EPSDT. Once a child appears for screening a maximum number of tests (at reasonable cost) should be provided that reliably identify medically significant conditions. Costs benefit in terms of the number of conditions discovered for the cost will be recorded. These additional tests include:

1) obtaining venous blood from the antecubital space and provide laboratory analyses for Hgb, Hct and red blood cell count on a Coulter Counter S with calculation of indices. In addition to children with anemia, children with mcv is a relevant index of iron deficiency.[1,2,3] Current research views iron deficiency as a systemic disease with implications for the pathogenesis of learning disorders and supports treatment in the absence of anemia.[4,5,6,7]

2) using easily collected urine samples (utilizing the method of Allen and Shinefield, Kaiser Foundation Medical Services, San Francisco) for culture in addition to protein and sugar determination for the detection of urinary tract diseases.[8,9]

3) providing rapid developmental screening tests (based on Giselle Developmental Scale) for all age groups which can be incorporated into physical examination.[10]

a. Iron deficiency anemia

(defined as hemoglobin below 11.0) will occur in about 10-25% of preschool children, the incidence decreasing with age.[13] In preadolescents and teenagers (using the hemoglobin level of 11.5 for girls from 12-15 plus 12 year old boys and using a level of 13.0 for 13-15 year old boys) the expected incidence of anemia will range from 5-27% depending on age and sex, according to the data compiled by Branet al.[14]

b. Iron depletion (defined as mcv below 79.0) will probably increase the number of referrals by at least 50% (iron depletion as defined by specific determination of low serum iron saturation would double or triple referrals).[15]

c. Urinalysis: 1-3% of dip sticks will be positive and there will be virtually no disease on FLU.[16]

d. Urine culture screened at 50,000 colonies by method of Allen and Shinefield will show 2.% initial positivity and 1/2% positivity on FLU diagnoson evaluation.[17]

e. Screening tests for hearing will produce 5% failures.[18] Subsequently 20-40% of children who fail the screening will probably be determined to have hearing impairment.[19]

f. Screening tests for vision will be positive in 7-8% of preschool children and those entering school.[20] 10-15% of school age children tested by the MCT will fail the screening. Most of these children will be determined to have some vision problem on followup.

2. Based on data collected from Project Head Staff in California[11] and prevalence of chronic medical conditions among children as indicated by U. S. National Health Survey of the Public Health Service.[12]

a. Medical: 20 to 40% of children will have conditions--mostly mild and chronic--that warrant referral to a physician. (Lower figure is probably more applicable to Contra Costa County because of relative ease of access to medical care). About 1/3 of these referrable conditions will be classified as major and 50-75% will not be under care.

The program anticipates maximum utilization of nurse practitioners and paraprofessional workers to provide the majority of the screening services within the limitations of the State laws governing medical care and practice. The differential use of personnel will enable the program to mitigate the effect of the physician shortages in the service areas, and paraprofessional workers will adhere strictly to performance standards and will have physicians available on site to provide supervision.

Project funds will be utilized to augment the inadequate subsidies authorized by the State. Contra Costa County estimates that even for the basic state enumerated service the authorized subsidies would only cover from 50-75% of the actual costs for these services.

Mainstream Care

Since EPSDT is a voluntary program, families will be encouraged and motivated to have children examined by the screening clinic with options for diagnosis and treatment through their own private physicians or health plans if these are available. Limited on site diagnosis and treatment will be available for families electing these services. These services should be well used considering the general paucity of health resources in the two communities. Linkages through mutual agreement or on contractual bases will be made with local or regional hospitals to provide clients with sophisticated diagnostic methods where these are indicated by the screening report.

Limited on site treatment will be provided under the auspices of Contra Costa County Medical Services Division. The pediatric clinic will provide short term and chronic outpatient care. As a means to facilitate the utilization of care, the program will compile and organize a panel of physicians and dentists (including medical care organizations) who are local care resources. Information to be gathered include: 1) care availability--type of practice, location, availability of public trans-

portation, [illegible] and appointment procedures

2) number of referrals the practitioner is willing to accept over a quarterly basis (3 months)

3) types of ancillary services provided by the practitioner (e.g., laboratory work, X-ray)

4) nature of participation with EPSDT demonstration program--information sharing, uniform reporting procedures, feedback mechanisms.

Target area coverage

EPSDT will be available for all children residing within the designated target areas. Both areas are characterized by low income and high numbers of public assistance recipients. The working poor, the underemployed and migrant workers have long been among those that receive the least amount of medical attention due to their sporadic Medicaid eligibility. For the purpose of this demonstration all residents are defined as current, former and potential recipients of AFDC, thus qualifying for screening and other services under a group designation of eligibles.

Concerted effort shall be made to specific high risk groups such as:

1) children of teenage and/or unmarried mothers

2) children in dependent, neglected or predelinquent circumstances

3) children referred for protective services

4) post premature infants and children

5) newborns residing in the target areas

Current recipients will be encouraged to use the screening service and will have some priority for on-site diagnostic and treatment services.

Two target areas are proposed to test the efficacy of a comprehensive EPSDT approach on an impacted urban area and a poor rural area.

Characteristics of the Richmond Model Neighborhood Area (MNA) include:

Area: The MNA consists of an area of 1,550 acres (2.4 square miles). The area is composed of census tracts 3760, 3800, 3650, 3770, 3790. Portions of the MNA lie

outside the city limits of Richmond. The subneighborhood of North Richmond is in an unincorporated area of the County and therefore does not receive regular City services such as City Police. (See map).

Population: Based on 1970 Census First County data, the total population in the MNA is ~~18,510~~ 22,132. Racial composition of the population is 81% Black, 17% Caucasian, remaining 2% other races such as Japanese, Chinese, Hawaiian, Filipino, Korean and American Indian. Approximately 6% of the Caucasian population is estimated to be Spanish surnamed.

Income: Social Service Department statistics as of March 28, 1971 show that 46.4% of the total MNA resident population receive Public Assistance (OAS, ATD, AB, AGDC, and GA).

Characteristics of East County Area

A. Isolation of Area

East Contra Costa County (also known as the Delta) is a large, sparsely populated rural area comprising 12% of the total land area of Contra Costa County and with 13,889 inhabitants comprising 2.5% of the county population. There is one incorporated city, Brentwood, population 2,649. Other communities are Oakley, population 1,306, Knightson, Byron, and Bethel Island. East Contra Costa County is comprised of census tracts 3010, 3020, 3031, 3040, and 3032. These circumstances have served to effectively isolate the area from the main stream of health care services more readily available to the rest of the county. The balance of the county is linked by a network of freeways and in some cases rapid transit. The nearest freeway terminates some three miles from Oakley, which is the East County community closest to the rest of the county. There is no public transportation.

APPENDIX C

The Record System and Data Flow - Contra Costa County

APPENDIX C

THE RECORD SYSTEM AND DATA FLOW - CONTRA COSTA COUNTY

The evaluation of the levels and adequacy of project activity required a data collection and analysis system which captured the major elements of data for both project management and evaluation analysis. This appendix starts with a discussion of the basic requirements when the system was first developed; describes the basic forms used to capture information from the medical screening; reviews the computer file developed for carrying out the analysis of medical data from the system; and ends with a discussion of the lessons learned.

At a minimum, there were five things the system was to do:

1. The medical data had to be collected in such a way that it could be put into statistical tables comparable to the other EPSDT demonstration projects in San Antonio, Contra Costa County, California, and Washington, D.C.

2. The forms had to be sufficient to meet the informational and medical/legal needs of the Contra Costa clinics with a minimum of paper work but at the same time collecting useable data and the forms had to be compatible with existing data systems in the county.

3. The system had to provide capability for tracking problems from referral to completion of treatment.

4. The system had to permit comparison of screening results on original and periodic screens for the same children.

5. The ability to distinguish part of the county down to census tract level, if necessary, was involved.

6. The results of any given screen had to be recorded the same day as the screen to avoid screening forms stacking up waiting for information--especially

since lab results were not available until several days later.

The Data Forms

A set of multiple-part forms was developed which included a family history, child history, screening sheet for each screen, and problem sheet (the problem sheet was also a referral sheet, or as named by project staff, the "Dear Doctor" form). These forms are included as attachment C.1. Each of these will be discussed briefly, pointing out major information sought on the form and unique aspects. The INSTRUCTIONS FOR FILLING OUT FORMS for the original set of forms is included as attachment C.2. A new screening sheet was developed toward the end of the project. This sheet and the corresponding instructions are included as attachment C.3. After each form is discussed, the data processing file structure and methodology will be presented.

Family History

The purpose of the family history was to describe the family structure, determine census track for locating the residence area of the family, and capture information about histories of health problems and the length of time in the area as a mobility measure. The only data concerning the family health problems that were stored in the computer was whether or not there were any. It was assumed that if major differences in screening findings showed up between families with problems and those without family health difficulties, then sampling studies could be conducted from the basic forms on file at HSRI. Notice that only one form served to record the family history for all individuals. In any kind of revised information system, we would suggest that, for EPSDT purposes, the key items of

census track, Medi-Cal status, sex, and birth date (or age) be captured on the screen sheet or Child History in order to eliminate the complexity this extra form adds in creating a data file structure.

The Child History

The purpose of this form was to serve as a history document for the medical record and an immunization record for the clinic, and for statistical purposes, to present a summary of the child's utilization of health services prior to the time of the original screens. It was found that immunization dates were very difficult to obtain and many times the staff would simply check that it was given or was needed without recording the date. Notice the add/delete box at the top. This allowed for a mechanism of correcting information originally reported that was found to be inadequate or erroneous.

The Screening Sheet

The sheet was designed to have a front and back page. The front would indicate areas of problems and the data on certain measurements, whereas the back had lines for recording notes about problems appearing on the front. Key items for statistical purposes were as follows:

Race/Ethnicity recorded at the top as either white (w), black (b), Mexican-American (M), oriental (O), or other.

Age, of the child in terms of the periodicity schedule. That is, regardless of the actual months or years of age. The child's age was indicated here in terms of the age closest to the ages at which period or screens were required.

Date of the Screen was recorded in order to conduct analyses according to time period. Also, there is no indication of the periodicity of the screen, so the date determined the order that screens got placed in the statistical file.

F/I Number--this number served as the project I.D. and contained the parent's Social Security number and additional two-digit code identifying the child.

Medi-Cal Number was recorded for billing purposes, for providing children's names to Medi-Cal for studies of patient profile and a determination of Medi-Cal status.

The Significant Observation column was placed on the left so an examiner could quickly determine what problems a child had on the previous screen and then flip over the page and review the notes. As discussed in Chapter 4, this contained either a "✓" for "needs referral", or "R" meaning the procedure needs to be redone prior to referral, or "O" meaning observe that the child had a problem that needed to be watched, but not referred at the present time. Since the lab work was, at the time of project, all conducted at an external lab the Significant Observation column was of little use in describing the outcome of lab work. It was not until it appeared as a problem sheet that it was known that a particular lab test was abnormal.

The Needed column was checked at the beginning of the screen and after the initial history in order to indicate which screening procedures were needed according to periodicity schedule and the child's present experience. If the procedure was complete, the staff member entered their code within the done by column. The staff code contained their skill level description as well as their unique number.

Required Immunizations were indicated by a circle on the row which says "Needed Test and Immunization". When the immunization was given, the circled test was checked (✔). The Current Status row was to be checked when the status of the child on the specified areas of immunization was considered "current for age".

Rows A and B were for extra tests. As it turned out, A was for lead testing and B was to indicate suspected child abuse.

The Problem Sheet

The screening sheet and the problem sheet are actually the crucial forms to a viable EPSDT management system--the screening sheet to tell what procedures are being rendered to how many children and the problem sheet to describe what was found that needed referral.

The problem sheet has three major parts. Shown in the attachment are five separate pages. The first part (first 2 pages) describes the reason for the referral

and initiates in the data system that a problem has been referred. Important information on this sheet included the reason for the referral (i.e., the screening positive finding), the newness of the problem, the date the problem was found and a problem number. This number is pre-stamped on each copy of the form so that tracking information can be linked into the correct problem.

The second part (last page of the attachment) is a franked buff-colored, self-addressed return mailer which is given to the doctor to whom the child is referred by the mother. The doctor completes the information requested, and then makes notes at the bottom of the sheet concerning the treatment plan. The key information that was retrieved from this form was the seriousness rating and the final diagnosis. Difficulty was encountered in getting any other information. Perhaps a different form should be developed for recording the extent of caries on the very frequent dental referrals.

The third part (third and fourth pages) contains the case monitoring information which is completed by EPSDT project staff through either the receipt of the treatment results from the physician, calling the physician's office, or calling the parent. The Status block was the main item of interest on this sheet. A Resolution Status code,described in Chapter 4, was developed in order to specify more clearly the problem status after six months from referral. The resolved/not resolved code was insufficient to describe what happened in the case.

When the top part of the Problem Sheet had been sent to the HSRI computer and six months had passed with no return sheet, a listing was mailed requesting an up-date on the follow-up status. The project staff then rounded up the Problem Sheet in question, determined the status, and returned the sheet. The pink sheets in Attachment C.1 were to be sent to HSRI. If a lone pink sheet was ever found in a chart, someone had goofed.

Since the lab results were not available at the time of screening, they could not be immediately recorded on the screening sheet, which was designed to be submitted on the day of screening. After several days, the lab slips were returned to the Health Department--one copy going to the Data and Projects Section for billing and the other to the EPSDT project director, who routed the slips to the initiating clinic location for charting. During the first six months, these results were not entered into the data system. However, when it became apparent that the rate of lab problems being reported was too low, the project staff began recording the problems on the problem sheets when referrals were indicated. The sheets were designed to record referrals and said "Dear Doctor", but many were handled by Public Health Nurses without referral and therefore were not considered to be like a referral to the doctor.

When the hemoglobin was between 10.1 and 10.0 grams, and the hematorcit was 30.1% or greater, a letter was sent to the parents stating that their child had a low-normal hemoglobin, probably due to an iron deficiency in the diet. A schedule of the dates, times, and locations of nutrition classes was also enclosed with the letter. When the hemoglobin was 10 grams or less, and the hematocrit was 30% or less, a note was sent to Public Health Nursing to refer the client to the usual source of medical care. At that point, a problem sheet was filled out for entry into the data system. When the hemoglobin was below 8 grams, the project director would telephone the field nurses in order to get the child to medical care as quickly as possible, and a problem sheet would be filled out for data system entry. The parents of children indicating sickle cell trait only were sent a letter explaining the potential problem and offering sources of additional information. For children with G6PD (enzyme

deficiency in black children), referrals for nutritional counseling were made as soon as possible, since children with the condition can become very ill if they eat the wrong foods. When the white blood count was elevated to 10,000 or higher but the hemoglobin was normal, the parents were sent a letter explaining that the child probably had an infection at the time the blood was drawn, and should any symptoms of illness (such as fever, sore throat, upset stomach, etc.) persist, the child should promptly be examined by a doctor. They were told to call the Public Health Nurse if they had any questions or if they needed assistance.

The sending of letters for less serious conditions worked out very well to provide follow-up for potential problems by reserving direct staff time for the more serious conditions, but this illustrates the difficulty in getting consistent reporting across projects.

Revision in the Forms

Late in the project, the Screening Sheet was changed to simplify the form and assist data processing efforts. For example, the space for the identification number was too small on the original sheet, making accurate coding of the number difficult. Attachment C.3 contains the revised form and corresponding instructions.

The Problem Sheet was not revised, but suggestions were discussed which would improve the Problem Sheet. Attachment C.4 contains the suggested revision. The major changes were as follows:

The type of provider (public/private, PHM) was indicated on the first page so that the rate of returned problem sheets from each type of provider, and rates of referral, to each could be monitored.

A seriousness rating was included in the referral portion in order to provide the screening examiner's estimate of the priority for follow-up. On the original forms, seriousness ratings were assessed by the person to whom the child was referred. Therefore, there was no way to assess priorities of follow-up.

On the second sheet, the health person to whom the child was referred was asked more direct questions. Another alternative suggested by some project staff was just to leave a blank space and ask for the treatment plan. Then the health department staff could assess the proper codes.

The bottom part of the sheet contained the revised Resolution Status codes that actually were already being coded by number on the original version of the Problem Sheet.

Computer File

The system developed for analysis of the data was more complex than would otherwise be required for routine EPSDT evaluation. The complexity came about for several reasons. The data file had to be sufficiently compatible with that of three other demonstration projects to permit access by use of a generalized statistical package (e.g., the Statistical Package for the Social Sciences - SPSS) and to allow simultaneous examination of several variables, e.g., comparison of findings on the same children for original versus periodic screens. At the same time, the system had to meet the unique requirements of the project.

There are two major and related data processing activities involved in the medical data system:

1. the statistical analysis file and
2. the data base file.

In the following discussion, the statistical file and analysis aspects will be discussed first and then the way data is entered and stored before building the statistical file will be presented.

The problem in building a generalized statistical file is that there are multiple levels of analysis. In some instances, the evaluator is interested in screen or child oriented results, such as the number, age, sex, ethnicity, and children screened (either original screens or periodic screens) and the rate of finding on each screening step (original versus periodic perhaps). In other instances, the focus is on the problems referred in terms of the rate of false positives, the rate of shows for treatment, the number of specific conditions found (perhaps according to original versus periodic screen, age, ethnicity, etc.). Because of this, the statistical file must be structured to consider each problem, but have the capability of looking also at screens. Therefore, a "record" was created for each problem, but

also contained all the screening data for the screen from which that problem was referred, and the related child history and family information.

To illustrate the way HSRI data processing solved this, take three children as shown in Figure 1. Suppose that one child has had two screens, with two problems on each screen and two other children have each had one screen with no referrals. Therefore, if problems were to be analyzed, (e.g., rate of treatment by condition), each "record" (representing a problem) in thedata file would be used in the analysis. If only screens were to be analyzed, the first record for each screen would be selected by selecting the "first in series" flag (set to one if it was the first record for that screen) because the structure was set up that the first record for any set of problems would contain the screen results. If only original screens were desired, only records that were "first in series, first occurrence" (i.e., first time a record for that child appeared), "screen count greater" than zero, and first screen (in the "screen sequence" block) would be selected from the computer tape. Other variables than those shown in the example were included on the actual tape to capture the information from each form (the SPSS variable list is given in Attachment C.5). Access of this statistical tape and the SPSS analysis was done via a cathrode ray tube terminal to obtain any required cross-tabulations. Each time a new set of data arrived at HSRI, a data processing "cycle" was completed in order to update the data that had been received previously and placed on a master file which was stored on tape.

The second part of the data processing component was building the data file from the data submitted by the project on the medical forms. This was done throughout the project to prevent the slippage of data accuracy and to provide more timely feedback.

Processing of the data prior to building the statistical file described was

a three stage batch mode process[1] as follows:

Stage 1: Entry and Editing. Data were coded on special code sheets, keypunched and computer edited for obvious out of field codes (such as age over 21).

Stage 2: New File Creation. Each time a new batch of data was edited and ready for input, the previous master file was sorted and the sufficient disk space was allocated to allow insertion of the newly received screening or problem sheets. During the process of determining disk space needs, a computer check was made to match name and identification number to determine whether or not the new screening sheet represented a new child or a periodic screen of an existing child. It often happened that the new screening sheet would have the same I.D. number as an existing child record on the file, but the name would be different. This was always a problem in all projects. Finally, a phonetic check was built in wherein if the last name sounded the same and the first two letters of the first name sounded the same, the name and number were assumed to match. If no match could be found, a new record was created. If it was close, but not certain, the whole record was rejected for manual editing. Accordingly, certain rejection criteria were developed. Manual review of a child's total file had to occur if any of the following events occurred:

1. If for any record, the name on the data entered in the computer data did not match on file. The match did not need to be exact and was determined by a combination of tests including exact match, phonetic match and first four character match.

2. If there was a duplication of dates for two different screening sheets.

3. If problem referral data were entered for which there was either no record at all of the child, or no record of a screen under that child's number.

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[1]In current HSRI applications, on line data entry is utilized.

4. If the same problem sheets were entered twice for the same child and the diagnosis codes were identical, the system assumed it was the same problem and ignored the new data.

5. If treatment or Resolution data were entered but there was no problem (identified by a unique number code) yet in the computer file.

The information from those documents that did not get rejected were then allowed to be inserted into the appropriate places in the master file structured like that shown in Figure 2.

Stage 3: Creation of the Statistical Tape. Periodically, as the data analysis was required, the information from the files (basic data file structure shown in Figure 2 was combined into the statistical tape described earlier.

The extensive editing and data maintenance processes described above grew out of experience with earlier EPSDT studies based on other state and local data systems containing many inaccuracies arising from inadequate editing. However, wider experience has made us think that the system used here was too cumbersome for routine use in projects of this size, as will be pointed out in the next section.

Lessons Learned about the Record System

As a result of the experience with the Contra Costa project and other EPSDT demonstrations, HSRI moved in several different directions in the processing of data when a requirement for detailed research data exists. A system of on-line data entry and simultaneous editing is necessary so the data entry personnel can quickly review the child's entire file to determine if the new data fits into the file. Many unique possibilities occur in the generation and separation of screening findings; thus, it is difficult to produce computer algorithim that anticipates all critical events and it is clerically too time consuming to go back to the child's complete paper file to determine the previous activity and current status

FIGURE 2

Master Record
(1 per child)

ID #	Name, Child History Data	Screen Count	Scr. Date 1	Scr. Date 2	...	Scr. Date 'n'

Screen count = # of screen dates in list.

Screen Record
(1 per screen)

ID #	Scr. Date	Screening data	Prob. Count	Prob # 1	...	Prob # 'n'

Problem Count = Tally of Problem Sheet #s in List.

Problem Record
(1 per problem)

Prob Sheet #	ID Data	Prob Id (S1)	D.& TRT (S2)	RESO. (S3)

Family Record
(1 per family)

Family ID #	Family History Data

FILE KEYS:

File	Key
1. Master	Child's #
2. Screen	Child's # + Screen Date
3. Problem	Problem Sheet #
4. Family	Family portion of Child's #

in the system. Along with this, forms should be carefully pretested at least six months before computerizing. Attention must be paid to developing internal flow of records procedures whereby the data clerks monitor the information status of all records to ensure that records are complete and accurate before the child leaves the clinic.

When the requirement is not so detailed (one wants to monitor just the basic rates of findings and follow-up), a more simplified system is needed for paper flow to and from the computer.

Conclusion

As a summary of suggestions about forms and processing made throughout the following suggestions to watch:

- The ID number and name are important in maintaining an accurate master file. A phonetic check of name and number along with on-line data entry is necessary to keep this straight. Perhaps addressograph cards would help, but they are rather expensive.
- It is difficult to capture immunization dates. Just keep track whether the screening personnel think the immunization status is current or not at the time of the screen.
- On the problem sheet, the indicator of the type of provider to whom the child is referred and the early indication of seriousness would be helpful on the first sheet.
- It is necessary to keep problem sheets distinct by a pre-stamped numbering system.
- The resolution code must contain more detail than resolved/not resolved as described in Chapter 4.
- Detailed analysis requires the creation of a statistical file in which

each record is a problem, but each first record for a child is a screen with the screening information replicated for each problem coming from the same screen.

A data system for evaluation of local EPSDT projects of the size of the Contra Costa project is necessary for analyses useful for managerial decision making. Without such a system, the large number of variables and cross-tabulations required (e.g., looking at results by age/staff/etc.), are too excessive for manual analysis. However, for an ongoing project, if a computer is to be used, the flow of paper to and from the computer needs to be kept at a minimum, and forms should be pre-tested for at least six months prior to the beginning of actual data collection. If sophisticated analyses for research purposes are required, then an on-line data entry and editing system is essential for accurate data entry and detailed analysis.

Attachment C.1

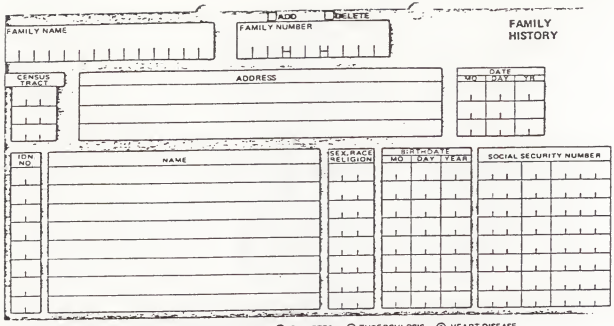
Original Forms used throughout the EPSDT Project

Family History

Child History

Screening

Problem Sheet (Dear Doctor - 3 pages)



1. DO ANY MEMBERS OF THE FAMILY HAVE A HISTORY OF: (1) DIABETES (2) TUBERCULOSIS (3) HEART DISEASE
(4) HIGH BLOOD PRESSURE (5) HAY FEVER (6) ASTHMA (7) ALLERGIES (8) CONVULSIONS
(9) MIGRAINE (10) NERVOUS BREAKDOWN (11) RETARDATION (12) OTHER
(ITEMS CIRCLED INDICATE YES) . . . DESCRIBE WHO:

2. ARE THERE SIGNIFICANT FAMILY PROBLEMS YOU NEED HELP WITH? ☐ YES ☐ NO

3. DESCRIBE ANY POSITIVE RESPONSES TO THE ABOVE QUESTION AND LIST ANY OTHER FAMILY SOCIAL AND/OR HEALTH PROBLEM.

IF REFERRED, WHAT AGENCY? _____

SOURCE OF MEDICAL PAYMENTS

☐ MEDICAL	☐ CASH
☐ PRIVATE INSURANCE	☐ MIXED
☐ PRE PAID PLAN	☐ SPECIAL

LENGTH OF RESIDENCE IN TARGET AREA? _____ MONTHS

FORM E K41 2-74

ADD DELETE

CHILD'S LAST NAME	FIRST NAME	MEDICAL NUMBER	F/I NO.

PERSON WHO NORMALLY PROVIDES HEALTH SUPERVISION FOR THIS CHILD

PHONE

CARETAKER'S OPINION OF CURRENT HEALTH OF CHILD

(1) HEALTHY (2) SOME PROBLEMS (3) SEVERAL CHRONIC, SEVERE, ACUTE PROBLEMS

CARETAKERS HEALTH ☐ HEALTHY ☐ SOME PROBLEMS ☐ SEVERAL CHRONIC SEVERE ACUTE PROBLEMS

PHYSICIANS NAME, ADDRESS, PHONE NO.

CHILD HISTORY

INITIALS

IS CHILD NOW UNDER DOCTOR'S CARE? ☐ YES ☐ NO IF YES, WHY

IN DECENDING ORDER, LIST ALL CONTACTS FOR ANY REASON, WITH HEALTH PERSONNEL IN THE PAST 12 MONTHS. (DENTIST, OPTOMETRIST, PSYCHOLOGIST, ETC.), INDICATING IF VISIT WAS FOR A SPECIFIC COMPLAINT OR CHECK UP. THEN LIST ALL MAJOR ILLNESSES, INJURIES AND OTHER HEALTH PROBLEMS DURING LIFE OF CHILD.

DATE	ILLNESS, INJURY OR OPERATION FOR LIFE OR CHECK-UP IN PAST 12 MONTHS	HOSPITAL	PHYSICIAN	CARE	CHECK UP

PREVIOUS PHYSICAL (PAST 12 MONTHS)

- ☐ HEARING
- ☐ VISION
- ☐ LAB
- ☐ PHYSICAL
- ☐ SCHOOL

MEDICAL CARE (PAST 12 MONTHS)

- ☐ WELL CHILD CARE
- ☐ P M D
- ☐ O P
- ☐ EMER
- ☐ D O S
- ☐ EYE
- ☐ OTHER
- ☐ SCREEN
- ☐ HOSP

SUMMARY

TEST: T8 SICKLE CELL + − T8 TRAIT

IMMUNIZATION HISTORY		DATE GIVEN	DATE NEEDED	NOT CLEAR
	OPT 1			
	2			
	3			
	B			
	B			
	OT			
	POLIO 1			
	2			
	3			
YEAR OF DISEASE	B			
	MUMPS			
	RUBELLA			
	MEASLES			
	CHICKEN POX			

IS IMMUNIZATION RECORD PRIMARY FROM RECORDS ☐ YES ☐ NO

HOW MANY CONTACTS WILL BE REQUIRED TO BRING CHILD UP TO DATE

FORM P K 51 2-74

M F O OTHER | MO DAY YR | AGE

PATIENT'S LAST NAME | FIRST NAME | F/I NO. | DATE OF SCREEN MO DAY YR

SOCIAL SECURITY NUMBER | MEDICAL NUMBER | SCREENING

DENTAL REGULAR CARE
1. HAS CHILD HAD DENTAL SCREENING? ☐ YES ☐ NO
2 HAS CHILD BEEN UNDER REGULAR CARE PROGRAM DURING THE PAST 12 MONTHS? ☐ YES ☐ NO
3 IS CHILD NOW IN REGULAR CARE PROGRAM (OPINION) ☐ YES ☐ NO

SIGNIFICANT OBSERVATION	PROCEDURE	NEEDED	DONE BY	MAY NOT NEEDED
	URINALYSIS			
	HEARING			
	VISION			
	PHYSICAL			
	PSYCHO-SOCIAL			
	NUTRITION			
	DENTAL			
	DENVER DEVELOPMENT			
	LAB			
	HEMOGLOBIN			
	SICKLE CELL G6PD			
	V D R L 12 OVER			
	P K U			
	NEEDED TEST AND IMMUNIZATIONS			
	CURRENT STATUS IMMUNIZATION			
	A			
	B			

HEAD CIR _____ INS | WEIGHT _____ LBS | HEIGHT _____ IN

SUGAR POS NEG | ALBUMIN POS NEG | TO LAB

	250	500	1000	2000	3000	4000	6000	NORM	ABNORM	OBS
R EAR										
L EAR										

	DISTANT UNCORRECTED	DISTANT CORRECTED	NEAR UNCORRECTED	NEAR CORRECTED	NORM	ABNORM	OBS
RIGHT							
LEFT							

CHECK (√) IF NORMAL CIRCLE ITEM IF ABNORMAL
HEAD NECK EARS EYES NOSE THROAT
HEART FEMORAL PULSE BP _____/_____
LUNGS ABDOMEN GENITALIA EXTREMITIES
SKIN NEUROLOGIC GAIT & POSTURE COMMENTS

DENTAL CARIES ORTHODONTIC SEE COMMENT

NORMAL SEE COMMENT

% HEMATOCRIT

gms

OPT OT POLIO MEASLES MUMPS RUBELLA TINE

OPT OT POLIO M M P

FORM S K55 2 74

☐ ADD ☐ DELETE

PATIENT'S LAST NAME	FIRST NAME	F/I NO.	DATE MO DAY YR

20213

DEAR DOCTOR,

THE ABOVE CHILD HAS RECEIVED A SCREENING EXAMINATION AND A PROBLEM IS SUSPECTED AS SHOWN BELOW

PROBLEM HISTORY

☐ COMPLETELY NEW TO CARETAKER ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE ☐ PREVIOUSLY UNDER CARE

REASON FOR REFERRAL _____

OTHER COMMENTS _____

☐ ADD ☐ DELETE

PATIENT'S LAST NAME	FIRST NAME	F/I NO.	DATE MO DAY YR

DEAR DOCTOR,
THE ABOVE CHILD HAS RECEIVED A SCREENING EXAMINATION AND A PROBLEM IS SUSPECTED AS SHOWN BELOW

PROBLEM HISTORY

☐ COMPLETELY NEW TO CARETAKER ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE ☐ PREVIOUSLY UNDER CARE

REASON FOR REFERRAL _____

OTHER COMMENTS _____

PLEASE ANSWER THE FOLLOWING QUESTIONS AND RETURN IN THE MAIL.

EXAMINATION DATE _____

1. WHAT WAS YOUR DIAGNOSIS OF REFERRED PROBLEM _____

2. IS THE DIAGNOSED CONDITION (CHECK ON SCALE YOUR EST.)

1 ——— 2 ——— 3 ——— 4 ——— 5

MILD MODERATE SEVERE

3. IS THE DIAGNOSED CONDITION

CHRONIC	ACUTE	SYMPTOMATIC	ASYMPTOMATIC
☐	☐	☐	☐

4. IF POSSIBLE TO DETERMINE, HOW LONG HAS THIS PROBLEM GONE WITHOUT ADEQUATE TREATMENT?

_____ WEEKS.

☐ CAN NOT BE DETERMINED ☐ INSUFFICIENT INFORMATION TO DETERMINE

5. WAS THE PROBLEM TREATED AT THE DIAGNOSTIC VISIT? ☐ YES ☐ NO

IF NO, WAS IT REFERRED? ☐ YES ☐ NO

IF NOT REFERRED, WHY NOT TREATED?

_____

6. WAS PROBLEM RESOLVED AFTER TREATMENT ☐ YES ☐ NO

7. IF ADDITIONAL VISITS ARE NECESSARY, WHEN DO YOU EXPECT RESOLUTION OF PROBLEM. DATE:

IF FOLLOW-UP CARE IS REQUIRED AND THE HEALTH DEPARTMENT CAN AID YOU IN SUCH AREAS AS HELPING PATIENT IN KEEPING APPOINTMENTS, SUPPORTING YOUR HOME TREATMENT REQUIREMENTS OR OTHER AREAS, PLEASE CHECK HERE ☐

PERSON FOLLOWING-UP	
STAFF PHYSICIAN	☐
STAFF NURSE	☐
OTHER STAFF	☐

REQUIRED CARE	
RECEIVED	☐
NOT RECEIVED	☐
REFERRED	☐

PATIENT'S RESPONSE TO CARE	
RESPONDING	☐
NOT RESPONDING	☐

PHYSICIAN'S PHONE

SOURCE OF INFORMATION	
CONTACT WITH PHYSICIAN	☐
CONTACT WITH PHYSICIAN'S STAFF	☐
PATIENT'S MOTHER	☐
OTHER (SPECIFY)	☐

_____

METHOD OF FOLLOW-UP	
PHONE	☐
MAIL	☐
PERSONAL INTERVIEW	☐
OTHER (SPECIFY)	☐

_____

STATUS	
RESOLVED	☐
NOT RESOLVED	☐

IF STATUS UNDETERMINED, WHY _____ COMMENTS: _____

REFERRAL PROVIDER (CHECK APPROPRIATE RESPONSES)

LOCATION	
ON SITE	☐
PUBLIC	☐
PRIVATE	☐

TYPE	
GP OR PED	☐
OTHER MEDICAL SPECIALIST	☐
OTHER HEALTH PROFESSIONAL	☐

☐ ADD ☐ DELETE

PATIENT'S LAST NAME	FIRST NAME	F/I NO.	DATE MO DAY YR

DEAR DOCTOR,
THE ABOVE CHILD HAS RECEIVED A SCREENING EXAMINATION AND A PROBLEM IS SUSPECTED AS SHOWN BELOW

PROBLEM HISTORY

☐ COMPLETELY NEW TO CARETAKER ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE ☐ PREVIOUSLY UNDER CARE

REASON FOR REFERRAL _____

OTHER COMMENTS _____

PLEASE ANSWER THE FOLLOWING QUESTIONS AND RETURN IN THE MAIL.

EXAMINATION DATE _____

1. WHAT WAS YOUR DIAGNOSIS OF REFERRED PROBLEM _____

2. IS THE DIAGNOSED CONDITION (CHECK ON SCALE YOUR EST.)

1 — 2 — 3 — 4 — 5

MILD MODERATE SEVERE

3. IS THE DIAGNOSED CONDITION

	CHRONIC	ACUTE		SYMPTOMATIC	ASYMPTOMATIC
	☐	☐		☐	☐

4. IF POSSIBLE TO DETERMINE, HOW LONG HAS THIS PROBLEM GONE WITHOUT ADEQUATE TREATMENT?

_____ WEEKS.

☐ CAN NOT BE DETERMINED ☐ INSUFFICIENT INFORMATION TO DETERMINE

5. WAS THE PROBLEM TREATED AT THE DIAGNOSTIC VISIT? ☐ YES ☐ NO

IF NO, WAS IT REFERRED? ☐ YES ☐ NO

IF NOT REFERRED, WHY NOT TREATED?

_____

6. WAS PROBLEM RESOLVED AFTER TREATMENT ☐ YES ☐ NO

7. IF ADDITIONAL VISITS ARE NECESSARY, WHEN DO YOU EXPECT RESOLUTION OF PROBLEM. DATE:

IF FOLLOW-UP CARE IS REQUIRED AND THE HEALTH DEPARTMENT CAN AID YOU IN SUCH AREAS AS HELPING PATIENT IN KEEPING APPOINTMENTS, SUPPORTING YOUR HOME TREATMENT REQUIREMENTS OR OTHER AREAS, PLEASE CHECK HERE ☐

PERSON FOLLOWING-UP		REQUIRED CARE		PATIENT'S RESPONSE TO CARE		PHYSICIAN'S PHONE
STAFF PHYSICIAN	☐	RECEIVED	☐	RESPONDING	☐	
STAFF NURSE	☐	NOT RECEIVED	☐	NOT RESPONDING	☐	
OTHER STAFF	☐	REFERRED	☐			

SOURCE OF INFORMATION		METHOD OF FOLLOW-UP		STATUS	
CONTACT WITH PHYSICIAN	☐	PHONE	☐	RESOLVED	☐
CONTACT WITH PHYSICIAN'S STAFF	☐	MAIL	☐	NOT RESOLVED	☐
PATIENT'S MOTHER	☐	PERSONAL INTERVIEW	☐		
OTHER (SPECIFY)	☐	OTHER (SPECIFY)	☐		

STATUS UNDETERMINED, WHY _____ COMMENTS: _____

REFERRAL PROVIDER (CHECK APPROPRIATE RESPONSES)

LOCATION		TYPE	
ON SITE	☐	GP OR PED	☐
PUBLIC	☐	OTHER MEDICAL SPECIALIST	☐
PRIVATE	☐	OTHER HEALTH PROFESSIONAL	☐

☐ ADD ☐ DELETE

PATIENT'S LAST NAME	FIRST NAME	F/I NO.	DATE MO DAY YR

DEAR DOCTOR,

THE ABOVE CHILD HAS RECEIVED A SCREENING EXAMINATION AND A PROBLEM IS SUSPECTED AS SHOWN BELOW

PROBLEM HISTORY

☐ COMPLETELY NEW TO CARETAKER ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE ☐ PREVIOUSLY UNDER CARE

REASON FOR REFERRAL _____

OTHER COMMENTS _____

PLEASE ANSWER THE FOLLOWING QUESTIONS AND RETURN IN THE MAIL.

EXAMINATION DATE _____

1. WHAT WAS YOUR DIAGNOSIS OF REFERRED PROBLEM _____

2. IS THE DIAGNOSED CONDITION (CHECK ON SCALE YOUR EST.)

1 — 2 — 3 — 4 — 5

MILD MODERATE SEVERE

3. IS THE DIAGNOSED CONDITION

CHRONIC	ACUTE	SYMPTOMATIC	ASYMPTOMATIC
☐	☐	☐	☐

4. IF POSSIBLE TO DETERMINE, HOW LONG HAS THIS PROBLEM GONE WITHOUT ADEQUATE TREATMENT?

_____ WEEKS.

☐ CAN NOT BE DETERMINED ☐ INSUFFICIENT INFORMATION TO DETERMINE

5. WAS THE PROBLEM TREATED AT THE DIAGNOSTIC VISIT? ☐ YES ☐ NO

IF NO, WAS IT REFERRED? ☐ YES ☐ NO

IF NOT REFERRED, WHY NOT TREATED?

_____

6. WAS PROBLEM RESOLVED AFTER TREATMENT ☐ YES ☐ NO

7. IF ADDITIONAL VISITS ARE NECESSARY, WHEN DO YOU EXPECT RESOLUTION OF PROBLEM. DATE.

IF FOLLOW-UP CARE IS REQUIRED AND THE HEALTH DEPARTMENT CAN AID YOU IN SUCH AREAS AS HELPING PATIENT IN KEEPING APPOINTMENTS, SUPPORTING YOUR HOME TREATMENT REQUIREMENTS OR OTHER AREAS, PLEASE CHECK HERE ☐

DISCUSSION OF ANY OTHER DIAGNOSES YOU FOUND

TO MAIL: FOLD ON ARROWS, FOLDING TOP DOWN, THEN REMOVE TAPE COVERING AND FOLD BOTTOM UP.

PLEASE PRINT YOUR NAME AND ADDRESS IN FULL

FIRST CLASS
PERMIT
NO. 60
MARTINEZ, CA.

BUSINESS REPLY MAIL – NO POSTAGE STAMP NECCESARY IF MAILED IN U.S.

POSTAGE WILL BE PAID BY

CONTRA COSTA COUNTY HEALTH DEPT.

P.O. BOX 871
MARTINEZ, CA 94553

Attachment C.2

Instructions for Filling out the Health Screening Forms (Final draft published in December 1974).

INSTRUCTIONS FOR FILLING OUT CHILD HEALTH SCREENING FORMS

FAMILY HISTORY - FORM E

Family History Form (Form E) is a four-page document. In completing the form the first thing that is to be determined is who is the person that is the Head of Household. If there is a joint male and female head of household, the male head of household is selected as the "Head of Household" and the family name will be the Head of Household's surname. All information should be printed.

A. Who fills out

The person doing intake interview fills out the form.

B. When filled out

Before the child enters the screening process.

C. Instructions for completing Form E

SECTION I

1. Family Name

Enter surname of head of household.

2. Family Number (Most important number to computer)

The family number is the file number in the computer where all the records on a family are stored. To avoid having duplicate files on the same family, the Social Security Number of the Head of Household (HOH) is used. If SS# is not available, the clerk assigns a Health Department Family #, using the Social Security # format: 000-XXX-XXXX. If there is a SS# for female head of household and there is a male head of household who has no SS#, assign a Health Department Family #. DO NOT USE the female head of household's SS# UNLESS SHE IS THE ONLY HEAD OF HOUSEHOLD.

3. Census Tract

Census tract # must be the census tract of the address where the family lives. Example: If person receives mail at a Post Office Box, use census tract of residence, not the P. O. Box.

4. Address

The address must be typed or printed in the following order: Number, number suffix, street, unit, city: example: 1151-1/2 WASHOE ST. APT-16, CONCORD.

a. Street Number - May consist of up to 5 consecutive digits, all must be numerical.

(1) Number suffix (if any) Example: -1/2 or -A after it must immediately follow the last number in the street number with a dash between. Example: 1151-1/2 or 1151-A. Leave no space between street #s, dash and suffix. To the computer, the first blank space indicates the beginning of the street name field.

b. Street Name - May consist of up to 30 characters, the first of which MUST begin with an alphabetical character other than a number.

Right: 317 FORTY FIFTH ST, CONCORD

Right: 317 N 45th St, CONCORD

Wrong: 317 45th ST, CONCORD

(1) Street Suffix - Must conform to one of the following abbreviations: AVE, BLVD, CIRC, CT, DR, FWY, HWY, LN, PL, RD, ST, TER, WY. No period should be used after the abbreviation. A comma is used as an indication of the end of the "Street & Street Suffix" field.

(2) P. O. Boxes or General Delivery - Are treated like a "Street Name" and may be up to 30 characters. Therefore, they MUST start with an alphabetical character:

P O Box 842, MARTINEZ

ROUTE 4 BOX 62, ANTIOCH

c. Unit or apartment # - May consist of up to 9 characters with a comma before and following the unit.

THIS INCLUDES THE COMMAS AND SPACES:

Right: 29 ASH ST, UNIT B, RICHMOND (9 spaces)
Wrong: 29 ASH ST, UNIT - B, RICHMOND (11 spaces)

Right: 29 ASH ST, APT-16, RICHMOND (9 spaces)
Wrong: 29 ASH ST, APT - 16, RICHMOND (11 spaces)

d. City - May consist of up to 16 characters and is separated from other fields by a comma.

e. Spacing of Address - Use the entire line. If the address is longer than one line, break the words at any point (do not split by syllables) at the end of the line. Just continue with the next letter in address on the second line.

DO NOT USE THE THIRD LINE OF ADDRESS SECTION.

Example: 45 Forty Fifth St., Concord. Other lines used for changes of address.

5. Date

Consists of 6 digits, in month-day-year order. Date used is the date that you first contact the patient. Use "First Contact Date" on FF (or as indicated on first C Form). Type zeros before numbers below 10: i.e., 1-1-70 written 01-01-70 not 1170.

6. Identification of Individual

a. Identification numbers

(1) List household members consecutively by status and age. Starting with male HOH, who is 01. The female HOH is 02. Oldest child is 11, next oldest is 12, etc.

(2) Normally only the first name need be typed for an individual. The last name is typed only if it is different from the family name. In this case it is separated from the first name by a period:

LA VERNE. SMITH

b. Children

1. Order - If children are being permanently raised from infancy in a family, they will be numbered in birth order sequence from 11. If at the time the file is opened and older children have permanently left the home, the eldest remaining may be considered 11. If grandparents have a child since infancy and in judgment of the worker it appears that they will continue to raise the child through adulthood, the child will be considered as their own for the purpose of numbering. The person taking the history is responsible for assigning numbers. If a child has a last name different from the family name, put a period in the space after his given name, immediately followed by his surname.

2. Foster Children - Children who are only temporarily in household; they will have their own family folder with an individual number in the 30 series. If oldest child does not have a SS#, assign a FF Code # from the supervisory block of #'s and the FF is made up in child's last name.

7. Sex, Race & Religion

This is a group of three alphabetical characters indicating in sequence: sex, race and religion. Religion will always be coded "U". The space 111 may be left blank, but if any information is inserted, three characters MUST be used. Fill in unknowns with "U"; i.e., MWU-Male, White, Unknown, or MUO, UNU.

a. Sex

Three allowable codes M-Male, F-Female, U-Unknown.

b. Race

Use only one of the following major or sub-codes.

The sub-codes are simply more exact descriptions of major codes:

MAJOR:	SUB-CODE:
White	I - American Indian M - Mexican G - Gypsy
Oriental	J - Japanese C - Chinese
Negro	
X - Other than classifications listed above.	
U - Unknown	

c. Religion - U

8. Birthdate

Dates must be indicated in month-day-year order.

If unknown leave blank. If only year is known, enter zeros for month and day; i.e., 00-00-70. If only month and year are known, enter zeros for day; i.e., 120070. Put zeros before numbers below 10; i.e., 01-01-70 not 1170.

Examples: November, 1970 is 11 00 70

November 1, 1970 is 11 01 70

1970 is 00 00 70

9. Social Security Numbers

Type the SS# of the individual if known. Only a SS# can be placed in the space designated for SS numbers. Do not enter a Health Department Code #.

SECTION II

1. Do any members of the family have a history of:

a. Circle any item for which there is a history of the diseases indicated in the family.

b. List below the name of the disease - then indicate the number of the family member (indicated on Family History Sheet) who has the history of the circled disease.

If the family member who has the disease is not listed on the E Form, indicate their relationship to patient being seen in EPSDT clinic.

c. If the child has had contact with anybody who has had TB, circle, then list below the # of the circled item and indicate the name if it is a family member indicated above. If it is not a family member indicated above, indicate their relationship to the child.

2. Are there Significant Family Problems You Need Help With

If the interviewer illicits from the family that there are marital, social, financial, health, etc. problems which strongly interfere with adequate family functioning and with which they wish help, she should check yes. Write problem in 3. If the answer is "no", check no. If the interviewer recognizes a problem she can note that problem in area 3. All interviewer impressions should start with "Interview....".

3. If there is a positive response to 2, describe situation and list the specific problems (include social, financial and health problems). Indicate whether or not the family expressed a desire for assistance with solving the problem.

4. If referred, what agency

If referred by Health Department personnel, write Health.

If patient was referred from another person that Health Department personnel, indicate the agency referring person represents.

Example: County Medical Services
Social Services
Schools

5. Source of Medical Payments

A check must be entered in one of the boxes.

6. Length of Residence in Target Area

Target area includes - see appendix. See map.

CHILD HISTORY - FORM P

A. Who fills out

The person doing the intake interview fills out, but more information may be added during the screening process.

B. When filled out

Before screening procedure.

C. Instructions for completing Form P

1. Child's name - The child's last name is the name the child is known by even if different than the family name. That name should be the same name listed on Family History Record.

2. Medi-Cal Number - If child is under Medi-Cal, put Medi-Cal number in designated boxes.

3. F/I No - Same as Family Number on Family History.

4. Person who Normally Provides Health Supervision of this Child

This may be a person other than the parent, and may be a person different from the one giving information on child's medical history.

5. Phone - If message phone, please indicate.

6. Caretaker's opinion of current health of child

This info should be illicited from the person who takes care of the child most of the time.

7. Caretaker's Health

The health of the person designated on #4 is what this question is asking.

8. Physician's Name

The name of the physician who the patient is currently being seen by or is considered by the caretaker as the patient's usual source of medical care.

9. Is child under doctor's care

If the child has been recently seen by a doctor for a health problem and has a return appointment for follow up on that same health problem indicate by checking the yes box.

a. If yes, why - indicate in this area the reason the child is getting medical care. State what the health problem is.

10. Initials

The initials of the person that completes the form should be entered in this space.

11. Health History Section (in past 12 months)

List all events (most recent first) below in chronological order.

a. List all contacts the child has had with any health personnel (M.D., dentists, optometrist, etc.) indicating: a) the date of contact, b) which hospital, c) the name of the health personnel and d) then indicate reason for the visit by checking care column, (if visit was for treatment of illness) or check check-up column (if visit was for well care.)

b. Also list all major illnesses (heart disease, diabetes, sickle cell anemia, rheumatic fever, etc.) injuries (fractures of any limb, head trauma, accidents and other health problems such as allergies, hay fever, eye problems etc.) that the child has had during his lifetime.

12. Previous Physical (past 12 months)

If a yes response is elicited, check the box. If a no response is elicited, put a zero in the box.

Example: "Has your child had any of the following done in the last 12 months?"

Response: Vision, "no" hearing "yes", school exam "yes"

Check as follows:

✓	hearing
0	vision
✓	school

13. Medical Care (past 12 months)

Indicate in the boxes to the left of the various categories (well child care, emergency, eye and screening, etc.) the number of services which were given in each category.

example: John had 10 well child care visits, 2 emergency visits and 1 op (clinic)

Check above as follows:

1	0	well child
0	2	emergency
0	1	op

If no services were given in any category, put zero in all the boxes.

14. Summary - This section to be filled in only by PHN

This section should include a summary of important highlights in child's past health history.

15. Test

a. TB - negative or positive should be written in this section if results known and date.

b. Sickle Cell - circle and if patient has sickle cell anemia, circle trait if it is known that patient has a trait.

16. Immunization History

This section is to provide an immunization history of the child.

a. date given

Enter at least the year and the month as close as possible if immunization was given over six months ago.

b. Date needed - RN to complete on date of screening when she gives an immunization. To be used as a guide by nurses to enable her to set up future immunization schedule for the child. It does not have to be completed.

c. Not current - This column is used to indicate the status of each immunization level; therefore, each box must be checked. If the immunization level is current, check box ☑. If the immunization level is not current, put a zero in the box 0.

d. Year of disease - this column should be filled in only if the child has had the disease. List year the child had the disease.

e. Is immunization record primary from records - Indicate yes if you obtained immunization information from a written record or if you obtained it from a M.D.'s office.

f. How many contacts will be required to bring the child up to date. Indicate how many visits to the clinic it will take to bring the child's immunization level up to date. Elicit this information at the time of screening.

D. Medical Consent - (located on back of Form P)

The statement on this page is directed to the parent/legal guardian of the minor being seen in the screen clinic. Every child receiving services in this clinic must have the form signed before services are given. Initially it is the responsibility of the worker or person who fills out the Child History Form to see that:

1. the parent or legal guardian reads the Medical Consent.
2. has an opportunity to ask questions and receives answers that will enable the parent or guardian to make an informed decision to either sign or not sign the document.

Finally it is the responsibility of the professional (who actually performs the procedure) to see that the above items (1), (2) and (3) have taken place.

1. Fill in the legal name of the minor, actual age
2. Date - actual date signed
3. Witness- refers to person who explained form and witnessed parent or guardian sign the form.

If signature of guardian is X, witness should print name of individual, initial and put in parenthesis.

example: X (John Doe (I/A)

Relationship to minor - please fill in this area and so indicate as mother, father, grandmother, godmother, aunt, step-father, etc.

SCREENING FORM (S)

A. Who fills out

1. General guidelines - the person who does the procedure is expected to complete the section which applies.
2. Individuals of varying classifications are trained to perform specific procedures. Assignments for carrying out these procedures will be made by the person responsible for each clinic and classification.

B. When filled out

At the time screening procedure is taking place.

C. Instructions for completing form S

1. Age (this age indicates standard screen schedule age closest to child's age)

The screen age schedule

example: if infant is 8 months, write 9 months since according to screening schedule infants are screened at 3 mo - 3 - 6 - (9) & 12. If a child is 12 years, 9 months - write 13 years.

2. Patient's last name - first name to be filled in as previously described.

3. Date of screen - the date entered in this section must be the actual date the child receives a health screening.

4. Social Security number - filled in only if the child has a Social Security number.

5. Medi-Cal number - if child has Medi-Cal coverage, so indicate by completing the box.

6. Dental regular care

   a. Has child had dental screening? - the box checked should reflect the caretakers actual response to this question.

   b. Has child been under regular care program during the past 12 months? - the box checked yes or no should reflect caretaker's actual answer to this question.

   c. Is child now in regular care program (opinion)? - The intent of this question is to enable the screener to determine if dental screening is actually necessary at the time of this screen. Therefore, the "yes" box should be checked if in your opinion from observation and information illicited that the child is under care. The "no" box should be checked if you believe the child needs dental screening.

7. Significant observation

   a. This area is to be checked (✓) whenever a referral is made for an abnormal observation or test result.

   b. A circle (O) should be placed in the area if the problem is one which is to be observed but not significant enough to refer.

   c. In situations where some areas are to be observed but others need referrals, the check (✓) takes precedence. If a check is made,

a referral should be made out - see referral procedure. If a check (✓) or circle (○) are made in this section, a S.O.A.P. note should be made on the narrative note (reverse side of screen forms) identifying the specific of the problem identified and the plan for care, etc.

8. Procedure

These are the specific areas to be tested. The procedures are listed in the usual order in which they are performed during a screening visit. Initials of the person performing each step should be placed in this column. (See section - for definition and guidelines for referrals.)

9. Needed

This column is checked by the clerk prior to the patient's being screened according to the guidelines established by the project.

10. Done By

The appropriate code for the level of workers performing each task should be placed in this column in the following sequence - personnel, type and identification number.

example: PHN whose identification number is 13 should enter in done by column numbers 813

If personnel does not have identification number, place a zero in front of code number.

example: pediatrician - code #2
02 is entered in done by column

Code Numbers are:

Personnel type	Code #
M.D. - pediatrician	1
M.D.	2
Specialist - audiologist, speech therapist, dentist	3
Psychologist, psychiatrist	4
Nurse or nurse equivalent	5
Aide of LVN	6
Volunteer	7
PNP or P.A.	8
Other	9

11. Why not needed

This column should be coded only if the procedure was needed but was not performed. The person performing the task determines why the procedure is not done and so indicated according to the codes described below. The codes are as follows:

Code of why the step was not done at this screening	
Patient uncooperative	1
Staff and/or equipment unavailable	2
Not performed because of other medical complication	3
Other	4

12. Needed test and immunizations

a. In this area the PNP or M.D. must circle immunizations that they recommend should be given to the child at the time of this screening exam.

example: (polio)

When the RN gives the immunization, then she must place a (✓) next to the circled immunization and also put her code number in the done by column.

example: done by 510 (polio) ✓

If immunization not given, why not needed column should be filled in.

b. Current status immunizations

The intent of this section is to determine the immunization level of the child according to the project immunization schedule policy. The immunization status is to be determined by the RN proving she has given the immunizations scheduled for that day. She must check those immunizations that are current for that child's age (according to project policy).

13. Space below item B

This area should be used for recommended return appointments that do not conform to project screen schedule.

example: If child is 4 months and has no immunizations (before screen), no return appointment for immunizations should be entered in this space as follows:

Return 1 mo for DPT #2

14. Referral Form - make separate referral for each health problem.

a. Identifying data

1. Last name, first name/follow as previously specified.

2. Date of screen/enter date of screen

b. Reason for referr l

Enter in this area specific reason for referral.

example: U.R.I. for one week

c. Other comments

Enter pertinent information relative reason for referral.

d. Problem History

1. Completely new to caretaker - check if caretaker was not aware of reason for referral prior to this visit.

2. Previously known but not under care - check if previously known to caretaker

3. Previously under care - check if patient was receiving care for the same health problem identified in this screen.

4. Physician - in this area indicate name of physician or specialist to whom referral is being made, date and time of appointment.

Attachment C.3

Revision Screening sheet and corresponding instructions.

Implemented in November 1976.

INSTRUCTIONS FOR COMPLETING SCREENING FORM(S):

To be completed at time screening procedure is performed.

1. At top left - circle race. (White, Black, Mexican, Chinese, Japanese, American Indian, Filipino.) Write in and circle (Other)
2. The "Add" box and adjacent date are used only for interim visits. Please see Instructions for Recording Interim Visits, page 16.
3. Birthdate - Fill in Child's birthdate.
4. Screening Age - This age indicates standard screen schedule age closest to child's age.
5. Patient's Name - Last name first.
6. Date of Screen - Actual date of services rendered.
7. F/I Number - Same as family number on Family History, plus individual's I.D. Number.
8. MediCal Number - Complete if child has MediCal coverage, if non-MediCal, leave blank.
9. C.H.D.P. Number - Number on Child Health ID card. (Page 18).

10. Significant observation

a. Leave blank if there is no significant observation of abnormality.

b. This area is to be checked (✓) whenever a referral is made for an abnormal observation or test result.

c. A circle (O) should be placed in the area if the problem is one which is to be observed but not significant enough to refer.

d. (R) should be placed in this area if the problem is one in which recheck is required.

e. Use only one code in this column. Referrals (✓) take precedence over the Recheck (R) and Observation (O). Recheck (R) takes precedence over Observation (O).

A referral should be made (see referral procedure) if a check (✓) is made in this section. If a (✓), (R), (O) is made in this section, note should be made on the reverse side of screen form (white copy) identifying the specifics of the problem identified and the plan for care, etc.

11. Procedure

These are the specific areas to be tested. The procedures are listed in the usual order in which they are performed during a screening visit. Initials of the person performing each procedure should be placed in this column.

12. Needed

This column is checked by the clerk prior to the patient being screened, indicating procedures needed this visit according to the established SEHS guidelines.

13. Done By

The appropriate code for the classification of workers performing each task should be placed in this column in the following sequence - personnel classification and identification number.

Example: PHP whose identification number is 13 should enter in "done by" column numbers 813.

If personnel does not have identification number, place a zero in front of code number.

Example: Pediatrician - code #1
01 is entered in "done by" column.

Code Numbers are:

Personnel Classification	Code #
M.D. - Pediatrician	1
M.D.	2
Specialist - audiologist, speech therapist, dentist	3
Psychologist, psychiatrist	4
Nurse (non-nurse examiner)	5
Aide	6
Volunteer	7
PNP (nurse examiner)	8
Other	9

14. Why not Done

This column should be coded only if the procedure was needed but was not performed. The person performing the task determines why the procedure is not done and so indicates according to the codes described below. The codes are as follows:

Code of why the step was not done at this screening	
Patient uncooperative	1
Staff and/or equipment unavailable	2
Not performed because of other medical complication	3
Other (specify reason on back of screening form)	4

15. Blank boxes A through E in Procedure Column are used to write in those screening procedures performed that are not already listed.

Example: Lead

16. Test and Immunizations

a. In this area the physician/nurse examiner must circle immunizations that they recommend should be given to the child at the time of this screening exam.

Example: (polio)

Person giving the immunization must place a (✓) next to the circled immunization, put their code number in the "done by" column and update the "date given" column on child history form.

Example: done by 510 (polio) ✓

If immunization not given, "why not done" column should be filled in with appropriate code.

b. Current status immunizations

The intent of this section is to determine the immunization level of the child. The immunization status is to be determined by the individual giving the immunization after giving the immunizations scheduled for that day. Check (✓) those immunizations that are current and circle those immunizations that are not current for the child's age (according to Immunization Schedule provided). MMR may be checked individually.

Example: ✓ ✓
M M R

17. In the "Physical Box" Blood Pressure must be recorded for all children starting at 3 or 4 years of age (depending on cooperation of child) and at each screen thereafter. If unable to obtain reading, place a numeral 4 in blank next to B.P.

    Example: B.P. 4

    Check (✓) BSE when instruction in breast self-examination is given.

18. Physician/Nurse Examiner must sign on signature line directly below the "physical box".

19. Bottom of Screen Form (on right hand side)

    This area is used for return appointments.

    a. If recommended return appointment does not conform to project screen schedule, use top date (Incomplete screen). Add reason for return and name of person making this decision.

    b. Return appointments conforming to SEHS schedule, complete bottom line only.

20. Bottom of Screen Form (Middle Section)

    Healthiness Rating (to be completed through July 30, 1977).

    Physician/Nurse Examiner who performs the physical examination will give a numerical "healthiness rating" for the child. Place number in lower middle portion of screen form.

    Determining Healthiness Rating: A numerical rating on a scale of 1-9 to indicate the ability of the child to learn, perceive, and play on the basis of medical or social factors.

    Unhealthy
    - 1 - Has a life-threatening problem or problems if remains untreated.
    - 2 - Not life-threatening, but unable to learn, perceive, or play majority of the time.
    - 3 - Limited ability to learn, perceive or play because of one or more systems malfunctioning.

    Some Problems
    - 4 - Limited activities less than majority of the time.
    - 5 - Has a problem only slightly limiting, slight change in life style needed, does require care to control or correct.
    - 6 - Problem is "self-limiting" in one month, but currently has limitations.

Healthy
- 7 - Any problems child has are self-limiting within one week.
- 8 - Normal health.
- 9 - Very healthy, very alert, good tone.

Healthiness Rating is for over-all child - Choose one rating.

Example:

	Unhealthy			Some problems			Healthy		
Current rating	1	2	3	4	5	(6)	7	8	9

Place (6) in lower middle portion of screen form, followed by initials of examiner.

21. Bottom of Screen Form (on left side)

a. Screening Clinic Number - Clerk fills in assigned clinic number.

b. Billing Code - Clerk fills in code indicating clinic eligibility:

1. 0 - 21 with MediCal - Code [M]
2. 200% above poverty entering first grade - Code [CMDS]
3. 0 - 21 - County Medical Services Prepaid Health Plan - Code [PHP]
4. 0 - 2 years without MediCal or PHP - Code [MCH]
5. WIC enrollees 2 - 4 years, 12 months without Medi-Cal or PHP - Code [WIC]

Instructions for Recording Interim Visits:
(Visits that do not conform to SEHS periodicity schedule.)

1. Additional visits to complete a screen:

   If, for some reason, a procedure due at appointment interval was not accomplished, a return appointment to complete the screen is made. For example, a hearing test not performed as child had an ear infection.

   a. It is necessary to initiate a screen form.

   b. Complete upper portion of screen form above word "screening".

      1) Circle race of child.

      2) Place an X in the "add" box.

      3) Date adjacent to "add" box - fill in date of initial screen (date of screen this visit is being added to).

      4) Birthdate of child.

      5) Screening Age - fill in screening age of child at time of initial visit (visit this screen is being added to).

      6) Complete patient's name.

      7) Date - in "Date of Screen box" fill in actual date of this visit.

      8) Fill in F/I Number as above and MediCal number if applicable.

   c. Fill in only the procedure(s) needed to complete the original screen. Comments may be written on back of screen form.

   d. Fill in clinic number, billing code, and return appointment at bottom of screen form.

   e. When returning for immunizations to complete a series, initiate a screen form. Complete form as above plus complete "Current Status of Immunizations" on Screen Form and update immunization box on Child History Form.

   f. These are billable visits. Route pink copy of screen form to Martinez.

2. Recheck Visits: When an individual returns to clinic for a recheck of a previously noted condition, do not initiate a new screen form but simply record findings on back of previous screen form. This is not a billable visit and "pink" billing form must not be sent to Martinez.

Instructions for completing referral form (small blue form on back of screen form):

1. Make a separate referral for each health problem.

   a. Identifying data

      1) Last name, first name/follow as previously specified.

      2) Date of screen/enter date of screen.

      3) If a referral is made between screens, enter date of last screen and beside date space.— Enter actual date a referral was made.

   b. Problem History

      1) Completely new to caretaker (person who takes care of child, i.e., parent, guardian, etc.) - check if caretaker was not aware of reason for referral prior to this visit.

      2) Previously known but not under care - check if previously known to caretaker.

      3) Previously under care - check if patient was receiving care for the same health problem identified in this screen.

   c. Reason for referral

      Enter in this area specific reason for referral. Complex - In order to indicate only one referral needed, use the word "complex" to precede several symptoms related to the same potential diagnosis.

   d. Other comments

      Enter pertinent information relative to reason for referral. If patient has no source of payment put " no source of payment" under comments.

   e. Physician - in this area indicate name of physician or specialist to whom referral is being made, date and time of appointment.

SCREENING

(1) W (8) M CH J F

(2) ☐ ADD | 1 | 7 | ☐ DELETE — MONTH DAY YEAR

(3) BIRTHDATE 6/4/61

(4) SCREENING AGE 15 years 10

PATIENT'S LAST NAME (5): JONES

FIRST NAME: JAMES

(6) DATE OF SCREENING: 06/04/76

F/I NO. (7): 5 7 9 H 6 0 H 4 3 8 0 H 1 1 1

MEDI-CAL NUMBER (8): 0 7 H 3 0 H 1 5 8 2 7 1 6 5 H 0 H 0 3

(9) CHDP NUMBER: 4500

(10) SIGNIF. OBSER-VATION	(11) PROCEDURE	(12) NEEDED	(13) DONE BY	(14) WHY NOT DONE	
	PKU				☐ POS ☐ NEG
	URINALYSIS ES A	✓	606		SUGAR POS NEG ✓ ALBUMIN POS NEG ✓ BLOOD POS NEG ✓
	HEARING				R EAR / L EAR — 250 500 1000 2000 4000 6000 8000 NORM ABNORM
	VISION ES A	✓	562		DISTANT: UNCORRECTED / CORRECTED; NEAR: UNCORRECTED / CORRECTED; NORM ABNORM COLOR. RIGHT 20/20 ✓ NORM ☑ LEFT 20/20 ✓ ABNORM ☐
	PHYSICAL ES D	✓	806		(17) CHECK(✓) IF NORMAL; CIRCLE ITEM IF ABNORMAL: ✓HEAD ✓NECK ✓EARS ✓EYES ✓NOSE ✓THROAT ✓HEART ✓FEMORAL ✓PULSE BP 100/70 ✓LUNGS BREAST-BSE ✓ABDOMEN ✓GENITALIA ✓EXTREMITIES ✓SKIN ✓NEUROLOGIC ✓DEVELOPMENT ✓GAIT & POSTURE COMMENTS
	PSYCHO-SOCIAL				
	NUTRITION ES D	✓			
	DENTAL ES B	✓	806		NORMAL CARIES ORTHODONTIC PROPH
					(18) SIGNATURE Jane Doe / PNP
	PAP				CLASS
	GC	✓		4	POS NEG
	VDRL ES A	✓	562		POS NEG
	BLOOD ES A	✓	562		HEMOGLOBIN GMS % HEMOCRIT
	SICKLE CELL GOPO				
(15)	Lead ES A	✓	562		
	B				
	C				
	D				
	E				
(16)	TEST AND IMMUNIZATIONS ES A	✓	562		DPT (DT) ✓ POLIO MEASLES MUMPS RUBELLA (TINE) ✓
	IMMUNIZATION STATUS ON LEAVING ES A	✓	562		DPT DT ✓ POLIO MMR ✓✓

CLINIC NUMBER 102

(20) 5y 2

(19) INCOMPLETE SCREEN RET'N ON DATE BY

(21) CODE M

NEXT SEMS SCHEDULED APPT 6/1-5

FORM S-K53 10/78 20 M

Attachment C .4

Suggested revisions for problem sheet copies

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PATIENT'S LAST NAME	FIRST NAME	F/I NO	DATE OF SCREEN MO / DAY / YR

XXXXX

PROVIDER ON SITE
- ☐ A) PHN
- ☐ B) CHW
- ☐ C) OTHER

PUBLIC
PRIVATE

DEAR HEALTH PROVIDER,
THE ABOVE CHILD HAS RECEIVED A SCREENING EXAMINATION AND A PROBLE IS SUSPECTED AS SHOWN BELOW.

REASON FOR REFERRAL

OTHER COMMENTS

PROBLEM HISTORY (✓ ONE)
- ☐ COMPLETELY NEW TO CARETAKER
- ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE
- ☐ PREVIOUSLY UNDER CARE

PROBLEM SERIOUSNESS (circle one)

1 MILD 2 3 MODERATE 4 5 SEVERE

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[illegible]	FIRST NAME	PHN	DATE OF SCREEN MO | DAY | YR

ADDRESS:

XXXXX B. Date ____

PROVIDER
ON SITE
- A) PHN
- B) CHW
- C) OTHER

PUBLIC
PRIVATE

DEAR HEALTH PROVIDER,
THE ABOVE PERSON HAS RECEIVED A SCREENING EXAMINATION AND A PROBLEM IS SUSPECTED AS SHOWN BELOW.

REASON FOR REFERRAL _____

OTHER COMMENTS _____

SIGNATURE AND PHONE # OF EXAMINER _____

PROBLEM HISTORY (✓ ONE)
- ☐ COMPLETELY NEW TO CARETAKER
- ☐ PREVIOUSLY KNOWN BUT NOT UNDER CARE
- ☐ PREVIOUSLY UNDER CARE

PROBLEM SERIOUSNESS (circle one)
1 MILD 2 3 MODERATE 4 5 SEVERE

PLEASE ANSWER THE FOLLOWING QUESTIONS AND RETURN IN THE MAIL AFTER THIS VISIT

EXAMINATION DATE _____

1. WHAT WAS YOUR DIAGNOSIS OF REFERRED PROBLEM? _____

2. IS THE DIAGNOSED CONDITION: ☐ CHRONIC ☐ ACUTE ☐ SYMPTOMATIC ☐ ASYMPTOMATIC

3. WAS THE PROBLEM TREATED AT THE DIAGNOSTIC VISIT?

☐ YES

IF YES, WAS THE PROBLEM RESOLVED AFTER THIS TREATMENT, OR CAN IT BE PRESUMED CURED OR INACTIVE WITHIN 10 DAYS OF THIS VISIT?
☐ YES ☐ NO

IF NO, ARE ADDITIONAL VISITS NECESSARY?
☐ YES ☐ NO

WHEN DO YOU EXPECT RESOLUTION OF THE PROBLEM IF NOT WITHIN 10 DAYS?
☐ 2 WEEKS-6 MOS ☐ 6 MOS OR MORE

☐ NO

IF NO, WAS THE PATIENT REFERRED
☐ YES ☐ NO

IF THE PATIENT WAS NOT REFERRED, WHY WAS THE PROBLEM NOT TREATED?
- ☐ CONDITION NOTED; TREATMENT NOT ADVISABLE OR WARRANTED.
- ☐ CONDITION NOTED BUT TREATMENT NOT AVAILABLE OR AUTHORIZED BY STATE PLAN.
- ☐ FAMILY FINANCES NOT AVAILABLE.
- ☐ SUSPECTED PROBLEM WAS NOT CONFIRMED AND DECLARED NO PROBLEM.
- ☐ OTHER. EXPLAIN _____

PROBLEM STATUS Note: Treatment includes counseling or health education

1☐ Condition minor, treatment completed on first visit or presumed to be cured or inactive within ten days of the first visit.
2☐ Treatment plan completed on subsequent visit(s).
3☐ Condition still under treatment.
4☐ Condition noted, treatment not advisable or warranted
5☐ Condition noted but treatment not available or not authorized.
6: Termination due to family moving, no longer eligible, or no family finances available
7: Parent not cooperative and after 3 contacts child does not show for appointment.
8: Suspected problem was declared no problem.
9: Forms coding error, clerical error.

IF STATUS UNDETERMINED WHY _____ COMMENTS _____

REFERRAL PROVIDER (CHECK APPROPRIATE RESPONSES)

LOCATION		TYPE	
ON SITE	☐	GP OR FPD	☐
PUBLIC	☐	OTHER MEDICAL SPECIALIST	☐
PRIVATE	☐	OTHER HEALTH PROFESSIONAL	☐

ATTACHMENT C.5

SPSS Variable List

Contra Costa County Data File

```
VAR LABELS      CHID01,FIRST 6 DIGITS OF CHILD NUMBER /
                CHID02,SECOND 5 DIGITS OF CHILD NUMBER /
                NAME1, FIRST 4 LETTERS OF CHILD NAME /
                NAME2, SECOND 4 LETTERS OF CHILD NAME /
                NAME3, THIRD 4 LETTERS OF CHILD NAME /
                NAME4, FOURTH 4 LETTERS OF CHILD NAME /
                NAME5, FIFTH 4 LETTERS OF CHILD NAME /
                NAME6, SIXTH 4 LETTERS OF CHILD NAME /
                CHH002,# RECORD CR DATE/
                CHH003,FIRST OCCURANCE FLAG/
                CHH004,MASTER RECORD INACTIVE/
                CHH005,CHILD HISTORY FLAG/
                CHH006,PROJECT ID/
                CHMCN01,FIRST 7 DIGITS OF MEDI-CAL NO. /
                CHMCN02,SECOND 7 DIGITS OF MEDI-CAL NO. /
                CTNAME1,FIRST LETTER OF CARETAKER NAME /
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CTNAME2,SECOND 4 LETTERS OF CARETAKER NAME /
CTNAME3,THIRD 4 LETTERS OF CARETAKER NAME /
CTNAME4,FOURTH 4 LETTERS OF CARETAKER NAME /
CTNAME5,FIFTH 4 LETTERS OF CARETAKER NAME /
CTNAME6,SIXTH 4 LETTERS OF CARETAKER NAME /
CHH008,CARETAKER TYPE/
PHONE,PHONE NUMBER /
CHH009,CHILDS HEALTH STATUS/
CHH010,CARETAKERS HEALTH STATUS/
CHH011,DOCTORS CARE/
CHH012,PREVIOUS HEARING/
CHH013,PREVIOUS VISION/
CHH014,PREVIOUS LAB/
CHH015,PREVIOUS PHYSICIAL/
CHH016,PREVIOUS SCHOOL PHY/
CHH017,WELL CH CARE 12MO/
CHH018,PRIVATE MD 12MO/
CHH019,OUT PATIENT 12MO/
CHH020,EMERGENCY 12MO/
CHH021,DENTIST 12MO/
CHH022,EYE 12MO/
CHH023,OTHER 12MO/
CHH024,SCREEN 12MO/
CHH025,HOSP 12MO/
CHH026,DPT IMM/
CHH027,POLIO IMM/
CHH028,MUMPS IMM/
CHH029,RUBELLA IMM/
CHH030,MEASLES IMM/
CHH031,CHECKED RECORD SOURCE/
CHH032,MO OF IMM CON TO CURR/
CHH033,AIDES INITIALS/
SIB001,SIBLING DATA FLAG/
SIB002,SEX/
SIB003,ETHNICITY/
SIB004,RELIGION/
SIB005,DATE OF BIRTH MO/
SIB006,DATE OF BIRTH DD/
SIB007,DATE OF BIRTH YY/
SCR001,SCREEN COUNT/
SCR002,SCREEN SEQUENCE MO/
SCR003,SCREEN DATE MO/
SCR004,SCREEN DATE DAY/
SCR005,SCREEN DATE YEAR/
SCR006,PROJECT ID/
SCR007,SCREEN DATE MO/
SCR008,SCREEN DATE DAY/
SCR009,SCREEN DATE YEAR/
SCR010,ETHNICITY/
SCR011,AGE AT SCREEN YR,MO/
SSN01,FIRST 5 DIGITS OF SOC. SECURITY NO. /
SSN02,LAST 4 DIGITS OF SOC. SECURITY NO. /
SCMCN01,FIRST 7 DIGITS OF MEDI-CAL NO. /
SCMCN02,LAST 7 DIGITS OF MEDI-CAL NO. /
SCR014,HAD DENTAL SCREEN?/
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SCR015,REG DENTAL 12 MO?/
SCR016,REG DENT CAR PROGRAM?/
SCR017,UA SIGNIFICANT OBSERVATION/
SCR018,UA NEEDED/
SCR019,UA DONE BY? TYPE/
SCR020,UA PERFORMED BY? ID/
SCR021,UA WHY NOT NEEDED/
SCR022,HEARING SIG OBSER/
SCR023,HEARING NEEDED/
SCR024,HEARING DONE TYPE/
SCR025,HEARING PERFORMED ID/
SCR026,HEARING WHY NOT NEED/
SCR027,VISION SIG OBSER/
SCR028,VISION NEEDED/
SCR029,VISION,DONE TYPE/
SCR030,VISION PERFORMED ID/
SCR031,VISION WHY NOT NEED/
SCR032,PHYSICAL SIG OBSER/
SCR033,PHYSICAL NEEDED/
SCR034,PHYSICAL DONE TYPE/
SCR035,PHYS PERFORMED ID/
SCR036,PHYS WHY NOT NEEDED/
SCR037,PSYCHO-SOCIAL SIG OBS/
SCR038,NUTRITION SIG OBS/
SCR039,DENTAL SIG OBSER/
SCR040,DENTAL NEEDED/
SCR041,DENTAL DONE TYPE/
SCR042,DENTAL PERFORMED ID/
SCR043,DENTAL WHY NOT NEED/
SCR044,DENVER SIG OBSER/
SCR045,DENVER NEEDED/
SCR046,DENVER DONE TYPE/
SCR047,DENVER PERFORMED ID/
SCR048,DENVER WHY NOT NEED/
SCR049,LAB SIG OBSER/
SCR050,LAB NEEDED/
SCR051,LAB DONE BY? TYPE/
SCR052,LAB PERFORMED ID/
SCR053,LAB WHY NOT NEEDED/
SCR054,HEMO SIG OBSER/
SCR055,HEMO NEEDED/
SCR056,HEMO DONE BY? TYPE/
SCR057,HEMO PERFORMED ID/
SCR058,HEMO WHY NOT NEEDED/
SCR059,SIC CELL SIG OBS/
SCR060,SIC CELL NEEDED/
SCR061,SIC CELL DONE TYPE/
SCR062,SIC CELL PERFORMED ID/
SCR063,SIC CELL WHY NOT NEED/
SCR064,VDRL SIG OBS/
SCR065,VDRL NEEDED/
SCR066,VDRL DONE BY TYPE/
SCR067,VDRL PERFORMED ID/
SCR068,VDRL WHY NOT NEEDED/
SCR069,PKU SIG OBS/
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SCR070,PKU SIG NEEDED/
SCR071,PKU DONE BY TYPE/
SCR072,PKU PERFORMED ID/
SCR073,PKU WHY NOT NEEDED/
SCR074,T&I SIG OBS/
SCR075,T&I NEEDED/
SCR076,T&I DONE BY TYPE/
SCR077,T&I PERFORMED ID/
SCR078,T&I WHY NOT NEEDED/
SCR079,NEED DPT/
SCR080,NEED DT/
SCR081,NEED POLIO/
SCR082,NEED MEASLES/
SCR083,NEED MUMPS/
SCR084,NEED RUBELLA/
SCR085,NEED TINE/
SCR086,IMM STAT SIG OBS/
SCR087,IMM STAT NEEDED/
SCR088,IMM STAT DONE TYPE/
SCR089,IMM STAT PERFORMED ID/
SCR090,IMM STAT WHY NOT NEED/
SCR091,CURRENT STAT DPT/
SCR092,CURRENT STAT DT/
SCR093,CURRENT STAT POLIO/
SCR094,CURRENT STAT MMP/
SCR095,PROCESS A SIG OBS/
SCR096,PROCESS A NEEDED/
SCR097,PROCESS A DONE TYPE/
SCR098,PROCESS A PERFORMED ID/
SCR099,PROCESS A WHY NOT NEEDED/
SCR100,PROCESS B SIG OBS/
SCR101,PROCESS B NEEDED/
SCR102,PROCESS BY DONE TYPE/
SCR103,PROCESS B PERFORMED IS/
SCR104,PROCESS BY WHY NOT NEEDED/
SCR105,PHYS HEAD/
SCR106,PHYS NECK/
SCR107,PHYS EARS/
SCR108,PHYS EYES/
SCR109,PHYS NOSE/
SCR110,PHYS THROAT/
SCR111,PHYS HEART/
SCR112,PHYS FEMORAL/
SCR113,PHYS PULSE/
SCR114,PHYS BP/
SCR115,PHYS LUNGS/
SCR116,PHYS ABDOMEN/
SCR117,PHYS GENITALIA/
SCR118,PHYS EXTREMETIES/
SCR119,PHYS SKIN/
SCR120,PHYS NEUROLOGIC/
SCR121,PHYS GAIT & POSTURE/
SCR122,PHYS COMMENTS/
SCR123,HEALTH RATING CURRENT/
SCR124,HEALTH RATING 6MO WITH TREATMENT/
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SCR125,HEALTH RATING 6MO WITHOUT TREATMENT/
SCR126,CHARGE CODE/
SCR127,CLINIC NO/
NDENTPC,PROBLEM COUNT EXCLUDING DENTAL PROBS/
SERPC,PROBLEM COUNT INCLUDING SERIOUS PROBLEMS ONLY/
SCR128,FIRST IN SERIES FLAG/
SCR129,PROBLEM COUNT THIS SCREEN/
PRB001,# PROBLEM SEQUENCE NO/
PRB002,# PROBLEM FORM NO/
PRB003,PROBLEM POSTFIX/
PRB004,PROBLEM DATE MO/
PRB005,PROBLEM DATE DAY/
PRB006,PROBLEM DATE YEAR/
PRB007,PROBLEM HISTORY/
PRB008,PROBLEM DIAGNOSIS/
PRB010,PROVIDER TYPE/
PRB011,S2 FLAG/
PRB012,EXAM DATE MO/
PRB013,EXAM DATE DAY/
PRB014,EXAM DATE YEAR/
PRB015,S2 DIAGNOSIS/
PRB017,SERIOUSNESS/
PRB018,CHRONIC OR ACUTE/
PRB019,SYMPTOMATIC OR ASYMPTOMATIC/
PRB020,TIME WITHOUT TREATMENT/
PRB021,TREATMENT/
PRB022,REFERRAL/
PRB023,IF NO, WHY/
PRB024,RESOLVED/
PRB025,FOLLOW UP DATE MO/
PRB026,FOLLOW UP DATE DAY/
PR3027,FOLLOW UP DATE YEAR/
PRB028,CAN HEALTH DEPT HELP?/
PRB029,S3 FLAG/
PRB030,PERSON FOLLOWING UP/
PRB031,CARE/
PRB032,RESPONSE/
PRB033,SOURCE/
PRB034,METHOD/
PRB035,STATUS/
PRB036,STATUS UNDETERMINED/
PRB037,PROVIDER LOCATION/
PRB038,PROVIDER TYPE/
FAM001,FAMILY DATA FLAG/
FAM002,CENSUS TRACT/
FAM004,INTAKE DATE MO/
FAM005,INTAKE DATE DAY/
FAM006,INTAKE DATE YEAR/
FAM007,NUMBER IN HOME/
FAM008,NO UNDER 21 IN HOME/
FAM009,AGE OF HEAD OF HOUSEHOLD/
FAM010,AGE OF HEALTH DECISION MAKER/
FAM011,FAMILY HEALTH HISTORY EXISTS/
FAM012,FAMILY PROBLEMS EXIST/
FAM013,REFERRAL SOURCE/
FAM014,SOURCE OF MEDICAL PAYMENTS/
FAM015,TIME IN AREA/
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```
CHH003 (1)FIRST REC FOR CHILD/
CHH005 (0)CH HIS DATA PRES(1)CH HIS DATA NOT PRES/
SCR006,CHH006 ('R')RICHMOND('B')BRENTWOOD('C')CENTRAL('O')OAKLEY
CHH008 (1)MOTHER AND FATHER(2)MOTHER(3)FATHER(4)GRANDPARENT
(5)OTHER SIBLING(6)OTHER REALTIVE(7)NON-RELATIVE(8)SELF/
CHH009 (1)HEALTHY(2)SOME PROBLEMS(3)SEV CHRON-ACUTE PROB
(0)UNKNOWN/
CHH010 (0)UNKNOWN(1)HEALTHY(2)SOME PROBLMES
(3)SEV CHRON-ACUTE PROB/
CHH011,CHH031,SCR014 TO SCR016,PRB021,PRB022,PRB024,FAM011,
FAM012(1)YES(2)NO/
CHH012 TO CHH016(1)HAD LAST 12MOS/
SIB001 (0)SIB DATA PRESENT(1)SIB DATA NOT PRES/
CHH026 TO CHH030(1)NOT CURRENT(0)CURRENT/
SIB002 ('M')MALE('F')FEMALE('U')UNKNOWN/
SIB003 ('W')WHITE('I')INDIAN('M')MEXICAN('G')GYPSY('J')JAPANESE
('C')CHINESE('O')ORIENTAL('N')NEGRO('X')OTHER('U')UNKNOWN
SIB004 ('U')UNKNOWN/
SCR010 (1)WHITE(2)BLACK(3)MEXICAN(4)ORIENTAL(5)OTHER/
SCR017,SCR022,SCR027,SCR032,SCR039,SCR044,SCR054,SCR059,SCR064,
SCR069,SCR074,SCR086,SCR095,SCR100(4)NOT NEEDED-ND
(5)NEEDED-ND-UNCOOP(6)NEEDED-ND-EQUIP(7)NEEDED-ND-SICK
(8)NEEDED-ND-MISC(0)NORMAL(1)ABNORMAL(2)OBSERVED(3)RETEST/
SCR018,SCR023,SCR028,SCR033,SCR040,SCR045,SCR050,SCR055,SCR060,
SCR065,SCR070,SCR075,SCR087,SCR096,SCR101(0)NOT NEEDED
(1)STEP NEEDED/
SCR019,SCR024,SCR029,SCR034,SCR041,SCR046,SCR051,SCR056,SCR061,
SCR066,SCR071,SCR076,SCR088,SCR097,SCR102(0)NOT PERFORMED/
SCR021,SCR026,SCR031,SCR036,SCR043,SCR048,SCR053,SCR058,SCR063,
SCR068,SCR073,SCR078,SCR090,SCR099,SCR104(0)WAS PERFORMED
(2)STAFF-EQUIP UNVAIL(3)PATIENT ILL(4)OTHER(1)PT UNCOOPERATIVE/
SCR079 TO SCR085(0)NOT NEEDED(2)NEEDED(1)NEEDED GIVEN/
SCR091 TO SCR094(0)NOT CURRENT(1)CURRENT/
SCR105 TO SCR122(0)NORMAL(1)ABNORMAL/
SCR128(0)NOR FIRST(1)FIRST OCCURANCE/
PRB007 (1)COMPLETELY NEW(2)PREV KNOWN NO CAR(3)PREV UNDER CARE/
PRB018 (1)CHRONIC(2)ACUTE/
PRB019 (1)SYMPTOMATIC(2)ASYMPTOMATIC/
PRB023 (1)ADD APPTS NEEDED(2)AWAITING TEST RESULT(3)AUTHORIZATION
(4)SURGERY(5)NOT NECESSARY(6)WONT RESPOND(7)AWAITING TREATMENT
(8)TREATED SUBSEQ VISIT(9)IN REMISSION/
PRB028 (1)YES(0)NO/
PRB030 (1)STAFF PHYSICIAN(2)STAFF NURSE(3)OTHER STAFF/
PRB031 (1)RECEIVED(2)NOT RECEIVED(3)REFERRED/
PRB032 (1)RESPONDING(2)NOT RESPONDING/
PRB033 (1)CONT WITH PHYSICIAN(2)CONT W PHY STAFF
(3)PATIENTS MOTHER(4)OTHER/
PRB034 (1)PHONE(2)MAIL(3)PERSONAL INTERVIEW(4)OTHER/
PRB035 (1)TREAT COMP FIRST VIS(2)TREAT COMP SUBSQ VIS
(3)STILL UNDER TREAT(4)TREAT NOT ADV-WAR(5)TREAT NOT AVAIL-AUTH
(6)FAM MOVED-NO FINANCE(7)PARENT UNCOOP(8)SUSP PROB,NO PROB
(9)CODING-CLERK ERROR/
PRB036 (1)MOVED(2)DID NOT KEEP APPT(3)STILL UNDERTREAT
(4)REFER TO ANOTHER DR(5)MAX BENEFITS ATTAIN(6)ADD APPTS NECESS
(7)NO MONEY/
```

```
PRB037 (1)ON SITE(2)PUBLIC(3)PRIVATE/
PRB038 (1)GP OR PED(2)OTH MED SPEC(3)OTH HEALTH PROFFES/
FAM013 (1)CHW(2)PHN(3)SOCIAL SERVICE(4)HV(5)HEADSTART
(6)WELFARE RIGHTS(7)MNA(8)HEALTH DEPT(9)DAY CARE CENTER
(0)RICHMOND BOYS CLUB/
FAM014 (1)MEDI-CAL(2)PRIVATE INS(3)PRE-PAID PLAN(4)CASH
(5)MIXED(6)SPECIAL/
PRB003,PRB015 (01)INFECTIVE(02)PINWORMS(03)NEOPLASM(04)THYROID
(05)DIABETES(06)NUTRITIONAL(07)OBESITY(08)ANEMIAS(09)PSYCHONEUR
(10)SPEECH(11)MENTAL RET(12)NERVOUS SYS(13)CONVULSIVE()4)VISION
(15)EYE(16)EAR(17)HEARING(18)RHEUM HEART(19)HEART(20)UPPER RESP
(21)LOWER RES(22)ALLERGY(23)CARIES(24)ORAL DENTAL(25)UPPER GI
(26)LOWER GI INTEST(27)LOWER GI OTHER(28)HERNIA(29)GENITOURIN
(30)MENSREPRO(31)PREGNANCY(32)DERMATOR(33)ORTHOPEDIC
(34)CONGENITAL(35)PERINATAL(36)ILL DEFINED(37)ENURESIS
(38)INJURY(40)OTHER(77)BAD CODE/
```

ATTACHMENT C.6

Clinic Codes Used in the Data System

HEALTH DEPARTMENT
Contra Costa County

TO: Genelle Lemon
Doris Sterling
Alice Jones
All Clinic Doctors
Dr. R. Smith

DATE: July 11, 1975

FROM: Jogi Khanna, M.D.
Acting Chief
Community Health Services

SUBJECT: Listing of clinic numbers for EPSDT & Screening Clinics

Please note that the following clinics will be identified by the clinic numbers indicated below:

CLINIC	NUMBER	DAYS OF OPERATION
EPSDT 8th Street, Richmond	108	All day Wednesdays & Fridays - Every week
EPSDT 118 Oak Street, Brentwood	305	All day Tuesdays & Thursdays - Every week
MacArthur Baptist Church	112	All day 1st Monday of each month
	111	All day 3rd Monday of each month
Martin Luther King Church	102	All day 1st Tuesday of each month
	104	4th Tuesday of each month-all day
Shield's Reid Clinic	123	All day 3rd Tuesday of each month
Easter Hill Rodeo	120 127	2nd Thursday of each month - all day All day 3rd Friday of each month
Pleasant Hill	218	12:30 pm - 4:30 pm 3rd Tuesday of each month
	219	12:30 pm - 4:30 pm 4th Monday of each month
Richmond County Building	107	1:00 - 4:30 pm 1st Friday of each month
	124	2nd Thursday of each month
	115	1:00 - 4:30 pm 2nd Friday of each month
Antioch Immanuel Baptist Church Richmond - 37th Street El Sobrante	 312 101 125	12:30 - 4:00 pm 2nd Wednesday of each month Teaching Clinic 4th Friday each month 9 - 5

All Lab slips, Dear Doctor forms, etc. should be identified by these numbers.

JK:ea

CAL-9 3/75 1M

CONTRA COSTA COUNTY HEALTH DEPARTMENT

3/76
WAL/PHNS 85

CLINIC NUMBERS

West County #1				
101	Training Clinic, Richmond	1st, 3rd, 4th Tues.	CHS	8:30-12:30
102	Martin Luther King, Richmond	1st Tues.	Satellite	9:00-5:00
103				
104	Martin Luther King, Richmond	4th Tues.	EPSDT Satellite	9:00-5:00
105				
106				
107	Richmond County Building	1st Fri.	CHS	1:00-5:00
108	Richmond, 8th Street	Wed & Fri.	EPSDT	9:00-5:00
109				
110				
111	MacArthur Baptist Church, S. Pablo	3rd Mon.	Satellite	9:00-5:00
112	MacArthur Baptist Church, S. Pablo	1st Mon.	Satellite	9:00-5:00
113				
114	Holy Ghost Assn., Pinole	2nd Fri.	Infant Screen	9:00-12:00
115	Richmond County Building	3rd Tues.	CHS	1:00-5:00
116	First Baptist Church, S. Pablo	2nd Wed.	Infant Screeh	9:00-12:0.
117				
118				
119				
120	Easter Hill, Richmond	2nd Tues.	CHS Satellite	9:00-5:00
121				
122				
123	Shields-Reid Center, Richmond	3rd Tues.	Satellite	9:00-5:00
124	Richmond County Building	2nd Thurs.	CHS	9:00-12:00
125	Church of the Nazarene, El Sob.	4th Fri.	CHS	9:00-5:00
126				
127	Rodeo Courthouse, Rodeo	3rd Fri.	CHS	9:00-5:00

CLINIC NUMBERS

Central County #2

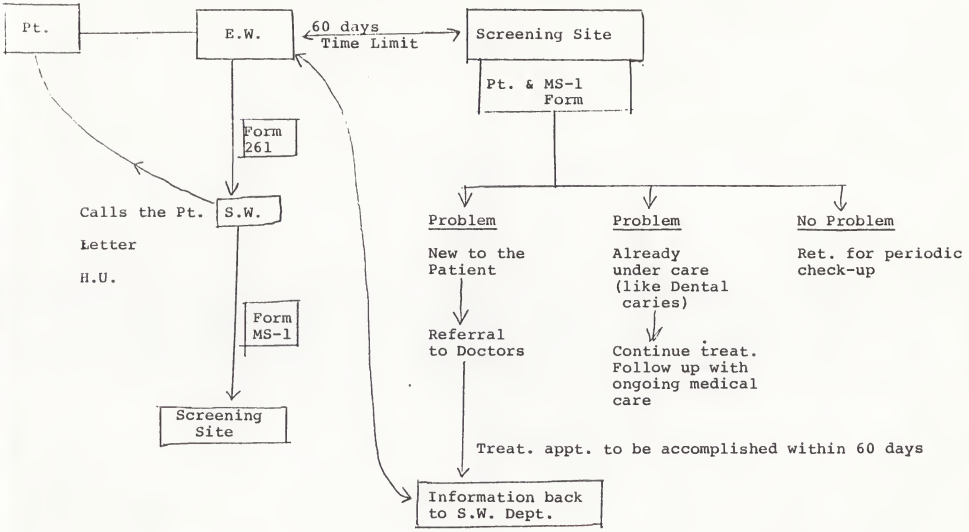
200				
201				
202	Tancredy Building, Pl. Hill	1st Mon	Infant Screen	1:00-5:00
203	Community Presbyterian Church Danville	1st Tues (Feb,Apr,June) (Aug,Oct,Dec.)	Infant Screen	9:00-12:00
204				
205	First Congregational Church, Mtz.	1st Tues.	Infant Screen	9:00-12:00
206	Latter Day Saints Church, P. Hill	2nd Mon.	Infant Screen	1:00-5:00
207	Full Gospel Church of God, Con.	2nd Mon.	Infant Screen	9:00-12:00
208	Church of Christ, Concord	2nd Tues	Infant Screen	9:00-12:00
209				
210				
211	Latter Day Saints Church, P. Hill	2nd Fri.	Infant Screen	1:00-5:00
212				
213	Church of Christ, Con	4th Tues.	Infant Screen	9:00-12:00
214				
215	First Congregational Church, Mtz.	4th Tues.	Infant Screen	9:00-12:00
216	Trinity Luth. Ch. Luther Hall, W.C.	1st Mon.	Infant Screen	9:00-12:00
217	Tancredy Building, Pl. Hill	4th Wed. Approx. every 3 mo.	Adult Screening	
218	Tancredy Building, Pl. Hill	3rd Tues	CHS	1:00-5:00
219	Tancredy Building, Pl. Hill	4th Mon.	CHS	1:00-5:00
220				
221				
222				
223				
224				
225				

CONTRA COSTA COUNTY HEALTH DEPARTMENT
CLINIC NUMBERS

West County #3

301	Antioch Women's Club, Antioch	3rd Mon.	Infant Screen	1:00-4:00
302	Solomon Temple Baptist Church, Pitt	1st Wed.	Infant Screen	9:00-12:00
303	Community Presbyt. Church, Pitts.	1st Wed.	Infant Screen	1:00-4:00
304				
305	118 Oak Street, Brentwood	Every Tues & Thurs	EPSDT	9:00-5:00
306				
307				
308				
309	Immanuel Baptist Church, Antioch	3rd Wed.	Infant Screen	9:00-12:00
310				
311				
312	Immanuel Baptist Church, Antioch	2nd Wed.	CHS	All Day
313	Marina Center, Pittsburg	3rd Fri.	Infant Screen	9:00-12:00
314	Marina Center, Pittsburg	3rd Fri.	Infant Screen	1:00-4:00
315				
316				
317	Ambrose School, Pittsburg	4th Wed.	Infant Screen	10:00-12:00
318	Ambrose School, Pittsburg	4th Wed.	Infant Screen	1:00-4:00
319	Immanuel Baptist Church, Antioch	4th Thurs	Infant Screen	1:00-4:00
320				
321	Shore Acres Baptist Church, Pitts.	4th Fri.	Infant Screen	9:00-12:00
322				
323				
324				
325				

SOCIAL WELFARE DEPARTMENT ROUTING OF A MEDICAL PATIENT THROUGH SCREENING CLINIC AND FOLLOW-UP



* F.A.D. - First available date.

3 copies of MS-1 required by SS Dept. and 2 copies by H.D.

APPENDIX D

Screening Procedures, Periodicity Schedule, and Clinic Staffing Requirements

Rates of Frequency

Age	SEHS[1]	Dental	Immunizations	Vision and Hearing	Laboratory
17 yrs.	Yes	Yes			Hb, UA, V.D.R.L.
18 yrs.	Yes	Yes			Hb, V.D.R.L.
19 yrs.	Yes	Yes			Hb, V.D.R.L.
20 yrs.	Yes	Yes			Hb, V.D.R.L.

1 Screening Evaluation of Health Status, maximum frequency allowable for normal child.

2 PKU tests will be done on urine until there are 2 negative tests.

3 DTP — diptheria, tetanus, pertussis.

4 TOPV -- trivalent oral polio vaccine.

5 Separate immunizations may be given on parental request.

6 Td — tetanus, diptheria (adult type). Administered only once during period 14 through 16 years.

7 V.D.R.L. (Venereal Disease Research Laboratory), R.P.R. (Rapid Plasma Reagent), or A.R.T. (Automated Reagent Test) -- test for syphillis.

8 UA -- urinalysis

9 Hemoglobin or microhematrocrit.

Screening Procedure

1. Medical histories will be completed by community health workers during their initial home visit with the family.

2. Screening appointments may be scheduled by the community health worker and she will also provide supportive services needed to get the child to the clinic.

Screening Test or Service	Primary Provider
1. Medical history shall include:	
(A) Details of pregnancy, birth, and neonatal period where appropriate	Community Health Worker
(B) Illnesses	Community Health Worker
(C) Hospitalizations	Community Health Worker
(D) Summary of growth and development	Community Health Worker
(E) Immunizations	Community Health Worker
(F) Family health history	Community Health Worker
2. Unclothed physical shall include:	
(A) Measurement and recording of height and weight	Community Health Worker
(B) Measurement and recording of head circumference	Community Health Worker
(C) Check for obvious physical defects	Pediatric Nurse Practitioner
(D) Examination of skin, heart, lungs, eyes, nose, mouth, ears, and throat	Pediatric Nurse Practitioner
(E) Assessment of general dental needs and provisional flouride treatment	Pediatric Nurse Practitioner
(F) Check for hernia (hydrocele)	Pediatric Nurse Practitioner
(G) Check for undescended testicles where appropriate	Pediatric Nurse Practitioner
(H) Neurological evaluations	Pediatric Nurse Practitioner
(I) Orthopedic evaluations	Pediatric Nurse Practitioner
(J) Developmental assessment	Pediatric Nurse Practitioner
3. Developmental test:	
(A) Gross and fine motor skills	Pediatric Nurse Practitioner
(B) Modified Denver developmental test	Community Health Worker

Screening Test or Service	Primary Provider
4. Immunizations:	
(A) Diptheria and tetanus toxoids combined with pertussis vaccine	Registered Nurse
(B) Trivalent oral polio virus vaccine	Registered Nurse
(C) Measles Measles, rubella Measles, mumps, rubella] May be given at 1 year separately or as measles-rubella or measles-mumps-rubella combined vaccines or as soon as seen after 1 year up to age 12.	Registered Nurse
(D) Combined tetanus and diptheria toxoids (adult type) for beneficiaries over six years of age in contrast to diptheria and tetanus (DT) containing a larger amount of diptheria intigen	Registered Nurse
5. Laboratory tests:	
(A) Blood tests:	Laboratory Technician by Contract
(1) Tests for anemia shall be either a microhematocrit measurement or a measurement of hemoglobin concentration	Laboratory Technician by Contract
(2) Tests for sickle cell disease All children having a Negro parent and having laboratory results showing anemia, i.e., hemoglobin of 10 or less or a hematocrit of 30 or less, shall receive an additional test to determine sickle cell status. Once sickle cell status has been determined additional tests shall not be reimbursable.	Laboratory Technician by Contract
(3) Test for phenylketonuria. A blood test for phenylketonuria is required only if the urine phenylalanine test is positive.	Laboratory Technician by Contract
(4) Test for syphillis. Either a V.D.R.L., R.P.R., or A.R.T. test for syphillis shall be done yearly beginning at age 12.	Laboratory Technician by Contract

Rates of Frequency

Age	SEHS[1]	Dental	Immunizations	Vision and Hearing	Laboratory
Within 2 mos.	Yes		DTP3		PKU2
4 mos.	Yes		DTP TOPV		PKU2, UA8
6 mos.	Yes		DTP TOPV		PKU2
9 mos.	Yes				PKU2, Hb9
12 mos.	Yes		Measles5 Rubella Mumps		
18 mos.	Yes		DTP TOPV		Hb, UA
2 yrs.	Yes	Yes	TB Test		Hb, UA
3 yrs.	Yes	Yes		Yes	Hb, UA
4 yrs.	Yes	Yes	TB Test	Yes	
5 yrs.	Yes	Yes	DTP TOPV		Hb, UA
6 yrs.	Yes	Yes		Yes	
7 yrs.	Yes	Yes			Hb9
8 yrs.	Yes	Yes			HB
9 yrs.	Yes	Yes		Yes	Hb
10 yrs.	Yes	Yes			HB
11 yrs.	Yes	Yes			Hb
12 yrs.	Yes	Yes			Hb, UA8 V.D.R.L.7
13 yrs.	Yes	Yes		Yes	Hb, V.D.R.L.
14 yrs.	Yes	Yes	Td6		Hb, UA, V.D.R.L.
15 yrs.	Yes	Yes	Td6		Hb, V.D.R.L.
16 yrs.	Yes	Yes	Td6		Hb, V.D.R.L.

Screening Test or Service	Primary Provider
(5) Venous blood sample	Registered Nurse
(B) Urine tests:	
(1) Tests for sugar and protein. The tests may be rapid tests of the "dip stick" type.	Registered Nurse
(2) Test for phenylalanine. Ferric chloride test or modification (dip stick) shall be performed on children under one year of age.	Registered Nurse
6. Vision Vision screening for children over four years of age for far visual acuity determined by a Snellen Test.	Registered Nurse
7. Hearing Screening for children over four years of age shall be provided by a puretone audiometer.	Registered Nurse

APPENDIX E

Code sheets and source documents for queing study

E.1 Queuing Information
One sheet per visit between February and April

E.2 Coded sheet for queuing information sheet used for keypunching cards for analysis by SPSS

E.3 Queuing Information Clinic Sheet
Shows staff involvement in a particular clinic

E.4 Screening Clinic Appointment Schedule

APPENDIX E.1 QUEUEING INFORMATION

CLIENT'S NAME _____ ID# 552-68-7203-12

APPOINTMENT TIME 1:30 TIME ARRIVED 2:00

SCHEDULED (✓) WALK-IN ( )

DO YOU HAVE ANY SPECIAL HEALTH CONCERN ABOUT YOUR CHILD THAT LED YOU TO COME TO THIS SCREENING CLINIC? YES ( ) NO (✓)

AGE OF CLIENT: YEARS 2 MONTHS ____ SEX OF CLIENT: M ___ F ✓

TOTAL NUMBER OF CHILDREN FROM SAME FAMILY SCREENED DURING THIS CLINIC? 1

ORIGINAL SCREEN ( ) ADD ( ) RECHECK ( ) PERIODIC SCREEN (✓)

DATE OF LAST CLINIC VISIT 1/26/77 REASON P.E.

DO NOT CONTI... BELOW OR AT ... BOTTOM OF TH...

088

(✓)

CLINIC STATION/ACTIVITY	TIME STARTED	TIME FINISHED	TOTAL TIME
REGISTRATION	2:00	2:05	.05
HIGHT, WEIGHT, & URINE (COMBINED)	2:07	2:10	.03
URINE WAS NOT OBTAINED AT TIME HIGHT AND WEIGHT WERE TAKEN			
VISION			
HEARING			
EXAMINATION ROOM	2:49	3:06	.19
a. UNCLOTHED PHYSICAL ( )	10 (ESTIMATE TIME)		
b. CONSULTING TIME (PNP/MD) ( )	10 (ESTIMATE TIME)		
c. REFERRAL CONSULTATION WITH CLIENT ( )	(ESTIMATE TIME)		
a. IMMUNIZATIONS (✓)	3:07	3:09	.02
b. LAB (✓)	3:10	(3:15)	.05
SCREEN FINISHED			
APPOINTMENTS MADE (CLIENT LEAVES CLINIC)	3:15	3:20	.05
MISCELLANEOUS SERVICES TO CLIENT AFTER SCREEN			

OUTSIDE TEMPERATURE: 1 HOUR BEFORE CLINIC ___ AT NOON ___ END OF CLINIC ___

WEATHER: COLD ( ), CLOUDY( ), RAIN( ), FOG( ), WARM( ), FAIR( ),SUNNY()

NUMBER OF CLERKS AVAILABLE 1 NUMBER OF AIDES AVAILABLE 2

NUMBER OF PHYSICIANS AVAILABLE 1 NUMBER OF NURSE EXAMINERS 2

NUMBER OF PHN'S AVAILABLE ___ NUMBER OF RN'S AVAILABLE 1

DATE 4-15-77

DAY OF WEEK: M ( ), T ( ), W ( ), TH ( ), F (✓)

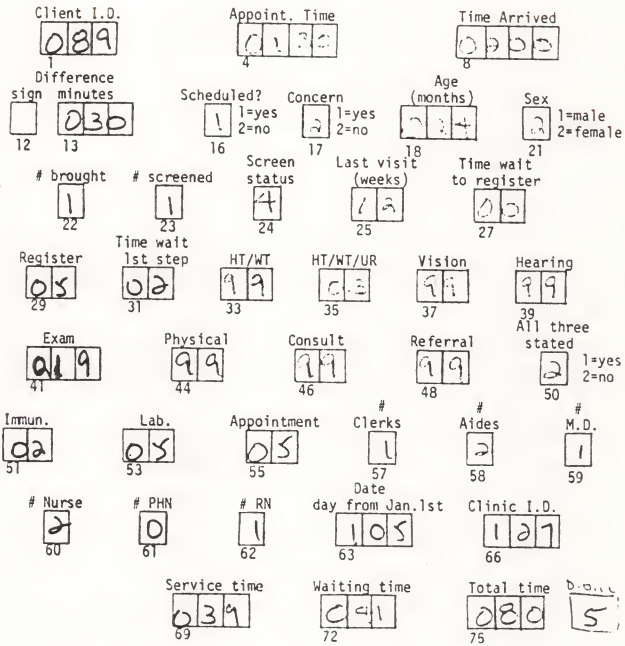
LOCATION OF CLINIC: INDICATE CLINIC # 12 OTHER ___

TOTAL SERVICE TIME 999 + TOTAL WAITING TIME 710 = TOTAL TIME IN SYSTEM 209

(1-29-77) FORM 01

APPENDIX E.2

Queing Study Code Sheet



APPENDIX E.3 QUEUEING INFORMATION

END OF DAY SUMMARY SHEET

1. CLINIC DATE 4-13-77

2. LOCATION OF CLINIC: INDICATE CLINIC # 108 OTHER _____

3. ESTIMATED TIME SPENT ON NON-SCREENING TASKS:

a.	BY CLERKS	180m
b.	BY AIDES	0
c.	BY PHYSICIANS	240m
d.	BY NURSE EXAMINERS	0
e.	BY PHN'S	0
f.	BY RN'S	0
	TOTAL TIME	420M

4. ESTIMATED TIME SPENT ON SETTING-UP AND TAKING DOWN ACTIVITIES FOR CLINIC:

a.	BY CLERKS	30m
b.	BY AIDES	0
c.	BY PHYSICIANS	20m
d.	BY NURSE EXAMINERS	60m
e.	BY PHN'S	0
f.	BY RN'S	60m
	TOTAL TIME	170m

5. TOTAL STAFF ACTIVITY TIME 1304m (186.3m/STAFF)

6. TOTAL STAFF WAITING TIME 754m (107.7m/STAFF)

7. TOTAL CLIENT SERVICE TIME 914m (39.7m/CLIENT)

8. TOTAL CLIENT WAITING TIME 916m (39.8m/CLIENT)

9. TOTAL NUMBER OF CLIENTS 23

10. TOTAL NUMBER OF STAFF AVAILABLE DURING CLINIC HOURS: (7) (2058m)

a.	CLERKS	1 (420m)
b.	AIDES	2 (45m + 205m)
c.	PHYSICIANS	1 (455m)
d.	NURSE EXAMINERS	2 (403m + 135m)
e.	PHN'S	0
f.	RN'S	1 (395m)

APPENDIX E.4

SCREENING CLINICS APPOINTMENT SCHEDULE WORK SHEET

CLINIC SITE & CODE #: 127 DATE: April 14, 1977

New	PHN MD	Type of Visit i.e., Lead, Hgb., PKU, etc.	Time	Name (Mother's name if different)	Comments	Billing Code
			9	(2) Susanna		
				(6) Thomas		
				(3) Marin		
				(4) Vernessa		
				(1) Cara Mia		WIC
			9:30	(5) Antio	18 mo Check	BA
				(8) [illegible]		BA
				(7) Monique		
				Joshua		
			10:00	(5) Irwin		
				(12) [illegible]	[illegible]	
				(11) Edwardo	[illegible]	
	Reopen			(9) Odessa		
	4/1		10:30	(15) Dedra		
KP				Malcom		BA
		AB		(14) Candice		
				Erika		BA
			11:00	[illegible]		BA
KP			1:30	Shawnda	Will come in at 9:30	
KP				(17) Jonaya	Will come in at 9:30	
				(21) [illegible]		
				(1) Armond MD		
				(18) Laura MA		
				(19) Arian MA		
				Adrian		BA
				(20) Kimberly		
				(16) Melissa		

N-41a Rev. 1/75 3M

7/24 CP

County Bldg.

SCREENING CLINICS APPOINTMENT SCHEDULE WORK SHEET

CLINIC SITE & CODE #: Lab Only DATE April 14, 1977

New	PHN MD	Type of Visit i.e., Lead, Hgb., PKU, etc.	Time	Name (Mother's name if different)	Comments	Billing Code
			4:30	[illegible]	BA	
			4:45	[illegible] Grant		

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APPENDIX F

Regression Equations based on 41 Clinics (not infant screen)
in the Queuing Study

APPENDIX F

Regression Equations based on 41 Clinics (not infant screen) in the Queuing Study

(t statistics shown in parentheses)

(SWT = Staff Wait-Time per scheduled child)
(KAR = Kept Appointment Rate)

SWT = 129.6 - 126.4 (KAR) - 1.2 (No Show) + 438 (RN's per scheduled child) R^2= .59

(9.25) (-4.8) (-1.79) (2.82) F^3_{37} = 17.66

SWT = 125.9 - 98.12 (KAR) - 2.13 (No Show) + 17 (RN*) R^2= .59

(8.8) (-4.02) (-3.17) (2.93) [1.37] F^3_{37}=18.06

SWT = 125.57 - 96.19 (KAR) - 1.95 (No Show) + 11.65 (RN + PHN) R^2= .57

(8.4) (-3.84) (-2.87) (2.54) [1.66] F^3_{37}=16.63

SWT = 82.94 - 76.47 (KAR) - .46 (No Show) + 224 (RN + PHN) R^2 = .68

t (4.74) (-3.42) (-.73) (4.52) F^3_{37}=25.94

$\bar{x}$ [54.48]** [.58] [17.90] [.11]

median {45.80} {.58} {18} {.09}

range (6-165) (.19-.98) (6-36)

SWT per scheduled appointment

= 115.88 - 143.58 (KAR) +396 (RN + PHN) R^2 = .55

(8.44) (-6.5) (3.23) F^3_{37}= 23.69

Distribution of RN	
#	Freq
0	3
1	20
2	18

Number PHN	
#	Freq
0	1
1	39
2	1

Number of Nurse Examiners	
#	Freq
0	2
1	22
2	15
3	2

*RN = # of RN's per clinic.

**The means for each variable are shown in brackets.

APPENDIX G

Factors Affecting Services and Waiting Time

On the following page is a set of fifteen regression equations. Here we will describe the information that appears on the page:

Dependent Variable: This is the unit of time (in minutes) for which we are trying to find factors that explain why the time varies from child to child.

Independent Variables: For each dependent variable, there is a set of related variables that can be used to explain why the dependent variable is different from child to child. Some of the variables are continuous measurements (age, number of M.D.'s, number of R.N.'s), but most are classifications. The variables (like not Wednesdays) are coded as a "1" when the condition is true for a particular child and "0" when it is not true for that child.

B: The regression coefficients: These indicate the minutes increase in time with a one unit increase in the independent variable associated with that coefficient, other things equal. When the independent variable is a 0-1 coded variable, the regression coefficient indicates that the independent variable is true for an individual, the average effect on the dependent variable is the value stated by the regression coefficient.

Beta weight: An indicator of the relative importance of the independent variable. The higher the absolute value of the number, the more important is the independent variable.

F for each variable: A statistic which verifies the statistical relatability of the independent variable. If this is greater than F^{5}_{∞} (a statistical table value--in this case approximately 2) then the variable is relevant.

R^2: The proportion of variability in the dependent variable explained by the independent variables.

None of the R^2's are very high, meaning that it would be difficult to explain the exact time for any one child, however the factors that have good F

statistics do independently impact the dependent variable.

F for the equation: An indicator of the reliability of R^2. In these equations, F>2 means that the relationship would be replicable in a larger population.

APPENDIX G (see description on previous page)

Dependent Variable	Constant	Independent Variables	B	Beta	F	R^2	f
Wait time to Register	6.59	Not Wednesday Appointment	- 1.197	- 0.058	5.536		
		Age	0.142	0.058	5.590	0.070	29.
		8:00 or 9:00 arrival time	3.185	0.154	39.026		
		Not East County	- 3.632	- 0.194	60.157		
Wait Time 1st Step	10.589	Not Monday Appointment	- 1.366	- 0.032	0.964		
		Age	0.052	0.015	0.359	0.154	46.
		10:30 arrival time	5.335	0.118	20.975		
		Clinic III	17.061	0.266	63.775		
		Not West County	- 4.192	- 0.174	43.437		
Registration Time	7.373	Not Central County	- 3.231	- 0.368	189.809	0.147	44.
		Age	0.018	0.019	0.648		
		Number of M.D.'s	- 1.585	- 0.077	10.768		
		Number of Nurses	- 0.385	- 0.074	8.158		
		Number of RN's	0.563	0.131	21.841		
		Not Original Screen	- 1.161	- 0.159	43.091		
Height and Weight Time	7.247	Not Monday	- 3.184	- 0.274	28.582	0.192	15.
		Age	- 0.113	- 0.115	5.263		
		Number of M.D.'s	- 0.733	- 0.041	0.672		
		Number of RN's	0.847	0.235	14.159		
		Not East County	1.104	0.212	12.260		
Height - Weight - Urine Time	4.855	Not Monday or Thursday	- 0.951	- 0.180	28.275	0.056	13.
		Age	- 0.067	- 0.103	9.814		
		Number of RN's	0.326	0.103	7.902		
		Not Central County	0.261	0.044	1.451		
Vision Time	15.444	Not Adds to Screen	- 2.349	- 0.169	5.503	0.092	6.
		Age	- 0.111	- 0.147	4.447		
		Number of Clerks	- 7.350	- 0.146	4.169		
Hearing Time	8.098	Not Adds to Screen	- 2.643	- 0.247	12.056	0.099	9.
		Age	- 0.097	- 0.166	5.431		
Total Examination Time	19.330	Not Monday or Tuesday	- 0.706	- 0.030	1.423	0.124	33.
		Age	0.211	0.072	7.782		
		Number of Nurses	0.325	0.020	0.505		
		Number of RN's	- 0.048	- 0.003	0.016		
		Not Original Screen	- 2.782	- 0.126	23.463		
		Not East County	5.915	0.267	76.928		
Consult Time	7.984	Number of RN's	1.779	0.213	4.029	0.133	3.
		Age	0.334	0.123	1.196		
		Not West County	- 2.763	- 0.240	5.070		
Immunization Time	6.050	Not Thursday or Monday	- 0.045	- 0.007	0.039	0.146	37
		Age	- 0.060	- 0.073	5.300		
		Number of Aides	0.388	0.083	6.730		
		Not West County	- 2.411	- 0.391	109.849		
Lab Time	6.438	Thursday or Wednesday Appt.	- 0.537	- 0.078	4.228	0.179	40.
		Age	0.124	0.154	21.120		
		Number of RN's	0.229	0.053	2.582		
		Cost of Central County	- 2.302	- 0.339	79.520		
Total Service Time	37.738	Not a Wednesday or Thurs. Appt.	3.164	0.088	13.388	0.168	44.
		Age	0.456	0.108	20.386		
		Number of Nurses	- 0.559	- 0.023			
		Number of RN's	0.670	0.034			
		8:00 arrival time	4.140	0.090	14.998		
		Not Original Screen	- 9.184	- 0.280	134.995		
		Central or West County	4.557	0.139	25.316		
Total Waiting Time	44.243	East or Central County	- 4.777	0.088	11.819	0.063	20.
		Age	- 0.023	- 0.003	0.016		
		Not Original Screen	- 7.192	0.123	23.711		
		Clinic 111 & 302	22.240	0.158	37.835		
		Friday or Monday Appt.	3.494	0.055	4.371		
Total Time	85.944	Number of RN's	2.541	0.062	6.212	0.132	39.
		Age	0.356	0.040	2.696		
		8:00 or 10:00 Arrival Time	8.094	0.101	18.132		
		Not Original Screen	-17.750	- 0.258	111.255		
		East or Central County	- 9.166	- 0.143	33.143		
		Monday or Friday Appt.	7.648	0.102	16.111		
Total Waiting Time	35.377	Scheduled Appointment	-10.642	- 0.041	2.912	0.184	40.
		Age	- 0.758	- 0.102	15.958		
		Not Original Screen	- 3.224	- 0.055	4.918		
		Clinic 111 & 302	-20.754	0.144	34.055		
		Friday or Monday Appt.	4.358	0.068	7.219		
		East or Central County	- 4.253	- 0.078	10.102		
		No. of Children in Family brought for Screening	13.028	0.351	185.280		
		Time Diff.	0.033	0.070	8.533		

APPENDIX H

Averages of Waiting and Service Time

APPENDIX H

Mean Service and Waiting Times by Various Factors
for Different Types of Screens

ARRIVAL TIME	COMPUTER CODE	ORIGINALS			ADDS AND RECHECKS			PERIODICS		
		Mean	SD	N	Mean	SD	N	Mean	SD	N
Service Time by Arrival Time		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
Not 8:00 to 10:00 O'Clock	0	46.02	14.34	393	23.17	12.75	232	38.30	12.33	645
8:00 to 10:00 O'Clock	1	47.98	15.80	91	22.52	11.96	34	41.49	12.33	187
Service Time by Part of County		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
West County	0	49.32	14.25	249	25.29	14.17	143	43.01	13.30	390
East and Central County	1	43.28	14.41	235	20.52	10.04	123	35.49	10.33	442
Service Time by Day of Week		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
Not Monday or Friday	0	46.22	14.90	381	23.54	12.99	208	38.15	12.00	617
Monday or Friday	1	46.99	13.65	103	21.46	11.22	58	41.49	13.18	215
Waiting Time by Arrival Time		48.89	28.08	482	30.00	24.41	254	37.86	26.60	823
Not 8:00 to 10:00 O'Clock	0	41.64	27.40	391	28.85	22.60	220	37.72	26.58	637
8:00 to 10:00 O'Clock	1	53.53	29.06	91	37.50	33.32	34	38.33	26.72	186
Waiting Time by Part of County		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
West County	0	49.14	31.17	247	32.98	27.54	135	40.93	30.04	383
East and Central County	1	38.37	23.23	235	26.63	19.85	119	35.18	22.89	440
Waiting Time by Day of Week		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
Not Monday or Friday	0	42.02	27.08	380	28.75	22.80	201	35.87	24.61	610
Monday or Friday	1	50.84	30.66	102	34.77	29.49	53	43.54	30.97	213
Total Time by Arrival Time		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
Not 8:00 to 10:00 O'Clock	0	87.24	28.78	393	50.63	27.57	232	75.31	29.62	645
8:00 to 10:00 O'Clock	1	101.33	31.12	91	59.73	35.11	34	79.39	29.35	187
Total Time by Part of County		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
West County	0	97.57	30.33	249	56.39	31.21	143	83.13	32.93	390
East and Central County	1	81.73	26.78	235	46.39	24.60	123	70.14	24.77	442
Total Time by Day of Week		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
Not Monday or Friday	0	88.11	29.47	381	51.33	27.71	208	73.40	27.21	617
Monday or Friday	1	96.46	29.83	103	53.34	32.33	58	84.36	34.32	215
Service Time by Clinic		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
All Other Clinics	0	46.16	14.48	459	22.97	12.50	263	38.75	12.26	799
Clinics 111 and 302	1	50.52	16.86	25	33.33	23.28	3	45.45	13.99	33
Waiting Time by Clinic		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
All Other Clinics	0	42.79	27.37	458	29.84	24.35	251	36.73	25.37	790
Clinics 111 and 302	1	64.75	33.59	24	43.33	31.50	3	64.78	39.02	33
Total Time by Clinic		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
All Other Clinics	0	88.65	29.29	459	51.48	28.41	263	74.82	28.57	799
Clinics 111 and 302	1	112.68	28.64	25	76.66	52.04	3	110.24	33.77	33
Service Time by Arrival Time		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
Not 8:00 O'Clock	0	46.08	14.36	432	23.05	12.63	243	38.40	12.41	712
8:00 O'Clock	1	48.92	16.60	52	23.43	13.04	23	42.65	11.70	120
Service Time by Part of County		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
East County	0	40.80	14.20	110	21.05	9.17	80	34.36	10.14	325
Central and West County	1	48.03	14.36	374	23.96	13.79	186	42.00	12.79	507
Service Time by Day of Week		46.39	14.63	484	23.09	12.64	266	39.01	12.39	832
Wednesday	0	47.12	14.54	397	23.07	12.84	195	40.32	12.38	619
Monday, Tuesday, Thursday, and Friday	1	43.05	14.63	87	23.12	12.16	71	35.23	11.66	213
Waiting Time by Arrival Time		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
Not 8:00 O'Clock	0	42.44	27.55	430	28.91	23.12	231	38.19	27.01	704
8:00 O'Clock	1	55.88	29.76	52	40.95	33.56	23	35.90	24.01	119
Waiting Time by Part of County		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
East County	0	40.34	23.74	110	28.10	20.65	78	36.49	23.96	324
Central and West County	1	44.94	29.18	372	30.85	25.91	176	38.75	28.16	499
Waiting Time by Day of Week		43.89	28.08	482	30.00	24.41	254	37.86	26.60	823
Wednesday	0	43.30	27.42	395	31.07	25.81	184	37.60	26.44	613
Monday, Tuesday, Thursday, and Friday	1	46.54	30.94	87	27.20	20.16	70	38.61	27.11	210
Total Time by Arrival Time		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
Not 8:00 O'Clock	0	88.10	29.03	432	50.61	27.63	243	75.96	30.16	712
8:00 O'Clock	1	104.80	31.36	52	63.95	37.07	23	77.84	25.96	120
Total Time by Part of County		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
East County	0	81.15	25.84	110	48.45	24.72	80	70.21	25.99	325
West and Central County	1	92.46	30.31	374	53.19	30.24	186	80.09	31.09	507
Total Time by Day of Week		89.89	29.71	484	51.77	28.73	266	76.23	29.59	832
Wednesday	0	89.95	29.39	397	52.43	30.24	195	77.22	29.57	619
Monday, Tuesday, Thursday, and Friday	1	89.62	31.31	87	49.94	24.19	71	73.34	29.51	213

APPENDIX I

Summary of Contra Costa County Outreach Study

in Richmond, California

Previously written as a part of Chapter 8 of the report published by

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An Interim Evaluation, April 1974-March 1975

APPENDIX I

MOTIVATING CLIENTS TO USE THE SCREENING SERVICES: AN EXPLORATION OF METHODS

The tasks and conditions of motivating clients to use the screening services (case finding) are in great part defined by the target populations. In the case of the four projects there are two generally different sets of conditions: The Barrio and Contra Costa Projects, on the one hand, serve families and their children residing in specified geographic areas; on the other hand, NCDCA and Cuba are targeted, respectively, on children served by a day care program and children enrolled in several schools. When compared to the conditions and terms under which most EPSDT programs are operated, three of the projects are relatively unique and useful for demonstrating differences in outreach requirements and tasks. However, the Contra Costa project, given the fact that it is operated by a local health department, is perhaps more typical of what will emerge as the most common pattern for delivery of EPSDT services. A principal difference is that this project has an outreach staff as an integral part of the program. More specifically, the Contra Costa project is responsible for its own outreach function, and is thus not dependent upon other agencies such as a welfare department to perform this task for it. Moreover, the health department had recently concluded a health care program which emphasized outreach services.

For these and other reasons the Contra Costa program undertook a two-phase pilot study to explore the effectiveness of various methods of casefinding. In the main, this chapter is principally devoted to a description of this study and its results. Prior to doing this, a brief consideration of the outreach

function is given, and some of the outreach conditions and problems in working with captive populations as experienced by the Cuba and NCDCA programs are reviewed. In describing the Contra Costa study, reference will be made to a limited exploration made by the Barrio Clinic in the use of incentives to increase outreach productivity on the part of community aides. The final section presents some guidelines for staffing case-finding programs.

The Case-finding Function

Many people are unsettled by the notion that an effort should be made, i.e., funds expended, to get families to bring their children in for medical care which is free.* This is no place to argue the pros and cons of this issue other than to suggest that the principal hope for avoiding future excessive health care cost and of assuring a healthier population is to move as directly and rapidly as possible into a preventive mode of health care rather than remain heavily invested in "after the fact", crisis oriented therapeutic medicine which is approaching the point of diminishing returns. To do this will no doubt require a marketing-like approach which will include a strong educational component.

Such considerations have to do with long-term outcomes, but so does EPSDT. In fact, it may be argued that EPSDT is the nation's first major effort at moving toward delivery of a preventive health care, and is targeted not only on a needy sector of the population but also on one where preventive

*The notion "free" perhaps needs to be placed in quotes to raise a question as to whether it is always without monetary costs. To get one's children to and from screening sites always involve costs of some order, and under some circumstances they are dollar costs. In a study of EPSDT in rural Mississippi counties, for example, it was found that some families without transportation had paid as much as 10 per cent of their monthly welfare income for taxi services to get to EPSDT screening clinics. Such costs are sacrifices when taken from limited Welfare support funds. SEE: J. Lindsey Bradley, "A Study of Broken Appointments For Pediatric Screening Examinations", (Master's Thesis, Trinity University, 1975), p. 54.

pay-off should be high. If past experience has taught us anything, it is that most of us, even the most knowledgeable among health professionals, not just the poor, all too often lack a long-run preventive orientation. Ways need to be found to correct this. Case-finding services oriented toward prevention can perhaps be conceived and conducted in a way to facilitate preventive health behavior.

But what of the short-term? Here the cost consequences are more immediate. To maintain cost-effective screening, children in sufficient numbers must be available to keep a screening staff busy. Certain costs go on regardless of how few children are screened; the smaller the number screened in a unit of time, the higher the per capita cost per screen. For this reason, if for no other, the case-finding function is important. The critical question is: What are the most cost-effective ways of getting children to screening sites? It is issues of this sort which are approached in this chapter.

Case Finding for Captive Populations

Screening populations such as those served by Cuba and NCDCA has the obvious advantage of having children being screened in one place at one time at no effort on part of the screening program. But this convenience has its price. Children not enrolled in school or day care programs are excluded from screening. To serve these children additional effort demanding an entirely different mode of operation is required. But many more immediate operational decisions and problems arise: should the screening be conducted on-site or should the children be transported to screening sites located away from the schools: Should the screen be multiphasic or monophasic, i.e., give the entire screening battery at one time or one step at a time on different occasions? Either approach presents problems. Children absent at the time of

screening require additional time and expense. Monophasic screening and absenteeism exacerbate the problem and particularly so when absenteeism is high.

Considerably more effort than either of the two projects anticipated was necessary for coordinating screening with school and day care programs. Personnel, at all levels, have to be well-informed about the program and understand its goals to obtain adequate cooperation. Simple notification of teachers that screening will take place on a certain date and hour is not sufficient. Both projects soon found that it was not only necessary to plan and schedule in advance, but also to remind administrative people and teachers as late as the day before that screening was to take place. Otherwise screening teams would arrive and the children would be on field trips, busily engaged in other activities, or not prepared for screening. Some evidence also suggests that where there is an existing health program, EPSDT screening may be viewed as an intrusion and a threat.

Other problems arise with respect to informing parents and in obtaining signed permission for having their children screened. This requires no small effort, even in a program such as NCDCA, where there is close contact between the organization and the parents. The problem is much greater under conditions such as exist in Cuba where children are transported many miles by bus to school, where there is no telephone service, and where communication via mail between parents and school is not an easy and habitual pattern. Children can and do take permission slips home, but this requires effort and time. One useful approach is to inform parents about the program at the time of school enrollment, but not all parents show up for this occasion. For those who do, however, health histories can be obtained as well as permission for screening.

If a program is billing Medicaid for screening of eligible children, as in the case of NCDCA, Medicaid numbers can also be obtained at this time. Failure to obtain such information requires considerable later outreach effort.

The following section of this chapter is somewhat different from the style of the rest of the report because it describes an exploratory social experiment in which families were assigned to alternative case-finding techniques. The discussion was included within this document so that all the current information would be under one cover. The conclusion is that the most cost-effective technique of those attempted was the use of community aides making home visits to clients after an average of 3.2 attempts per person contacted. The aides were allowed flexibility in the timing of the contact and the methods used to convince the client of the value of screening. Readers not interested in the detail of the exploratory experiment should move to page 102 to read the discussion of the suggested staffing guide and the chapter conclusions.

The Contra Costa Case-Finding Study: Preliminary Findings

The case-finding study was undertaken to explore the differential effect of various methods of informing families about EPSDT services and to encourage them to have their children screened. The study, conducted in two phases, focused on 1,020 Medicaid families randomly selected from lists of eligibles residing in three census tracts in Richmond, California. In the first phase of the study, 600 of the families were approached in wave-like fashion successively employing five different outreach methods. In the second phase, six groups of 70 families each were approached using only one of seven different methods with each group. As will be seen, some of these were different combinations of methods used in the first phase.

In the wave study, those families which had had their children screened or otherwise ruled out of the study because of various contingent factors, including those which requested not to be contacted again, were not contacted in subsequent waves. The outreach methods employed were:

1. Letters were sent to all families informing them of EPSDT and suggesting that they have their children screened. Instructions were given on how to do this. Half of the families received letters on the stationery of the Health Department of Contra Costa County and half received the same letter from the County Social Services Department. The aim here was twofold: (a) to see how much response would come from letters, and (b) to see if there would be a difference in response according to the source of the letters.

2. The second wave was a brief telephone conversation by community aides bearing essentially the same message as the letter.

3. The third wave was a brief (about five minutes) home visit by the Community Health Workers (CHWs) who explained the program and invited participation.

4. The fourth contact was a second, more extended visit, in which the CHWs provided health education information and took a child health history.

5. The final wave suggested and named by the CHWs as the "anything goes" method called for greater freedom and flexibility in working with the families, i.e., the workers were free to evaluate each situation, and make home visits and telephone calls at times other than regular working hours.

The second phase of the study was planned and initiated between the third and fourth waves of the first phase. It was in the planning for the second phase when the "anything goes" method emerged. Thus, it was not part of the original design of the study. Moreover, it was used in phase two before it was applied as the final wave of the first phase.

Six weeks before the first phase got underway, a newspaper article announced the availability of EPSDT services and suggested that parents call for appointments to obtain these services. This announcement, not an integral part of the study, generated no noticeable response. Use of the mass media,

it may be noted, requires the least amount of effort on the part of a program and, conversely, requires greater motivation and effort on the part of the target population. One is never fully assured, however, as to what extent one's message is received by the target audience or how well the message is understood. The smaller and more unique the target group, the less certain one can be about these matters.

The study was initiated in the first week of June, 1974 by mailing of the 600 letters, and extended over a period of approximately 12 months. Approximately one month separated the letter and the telephone waves, and between the telephone wave and the first home visit. Four months separated these visits from the initiation of the more extended home visits in which health histories were taken, and the final wave got under way some five months later. All these contacts were made by the CHWs during the course of other duties. This explains, in part, the extension of the project over time but there was also the fact that visits, even though brief, required greater time.

Before giving the results obtained after each successive wave, it is instructive to examine what was learned about these families during the course of this effort.

Telephones: The records of these families had shown that some 255, over 40 per cent, had telephones, but 18 per cent (46) of these had been disconnected or numbers were in error. At the outset of the study then, only one-third of the families were capable of being reached by telephone.

Addresses: By the end of the study, 127 (21%) of the families were not locatable by home visits because of residential moves or unlocatable address. About one-third of these occurred in each of the three home visit waves.

No children: Twenty-five of the families (4%) reported that they had no children at the time of contact. This resulted from change in eligibility

status, or situations in which relatives had been in custody of children because of absent parents. About half of these cases appeared in the final or third wave of home visits and about one-quarter in the first and second home visits.

Phase One Results: The results obtained by each of the several waves are summarized below: (Covers the first appointments)

1. Letters: Eleven families (1.8%) responded to the letters and scheduled appointments, but only six (55%) were kept. Of the 11 families, seven (63%) were in response to the letter from the Social Service Department, and the remainder from the Health Department letter. Appointment keeping was reversed: only three of the seven (43%) making appointments in response to the Social Service letter kept them while three of the four (75%) responding to the Health Department letter kept their appointments. These differences are interesting, but the numbers are far too small to warrant speculation. In spite of the problems of incorrect and changed addresses, only one of the letters were known to have been returned as undeliverable.

2. Telephone contacts: The effort to reach the 255 families who had indicated possession of a telephone may be summarized as follows:

a. There were 436 attempted calls for an average of 1.7 calls over the 255 families listed as having telephones, but 46 (18%) of these were disconnected or wrong numbers.

b. The calls averaged eight minutes in length.

c. There were 141 (67.5% of 209) completed telephone calls which produced the following results:

1) Twenty-eight families (20%) scheduled appointments of which 17 (61%) were kept.

2) Thirty-six families (26%) refused services.

3) Four families (3%) had had their children screened.

4) Seventy (50%) neither refused services nor scheduled appointment.

3. Home visits: Results from the three final waves of the study are summarized in the following tabulation:

		Information Visit	History & Education Visit	Anything Goes Approach
(1)	Number of Families	536	427	229
(2)	Attempted Contacts	1,134	1,012	721
(3)	Actual Number Contacted	348	182	150
(4)	Average Number of Attempts Per Family Contacted	2.1	2.4	3.2
(5)	Appointments Scheduled	15 (2.8)*	56 (13.1)*	62 (27.1)*
(6)	Appointments Kept (% of those scheduled) First appointment	40.0***	44.6	54.8
(7)	Moved (%)	6.2	10.1	18.3
(8)	Not at home (%)	28.5	45.0	16.2
(9)	Not Interested (%)	3.0	0.7	2.2
(10)	Non-Committal Interest (%)	47.0	1.6	0.0
(11)	Children Already Screened (%)	7.8	10.5	9.2
(12)	Have Own Physician** (%)	1.9	5.2	16.2
(13)	Other (%)	2.6	1.6	5.7
(14)	Refused Service (%)	0.0	10.1	2.2
(15)	Unable to Locate (%)	0.0	2.1	0.0

* This percentage and all below it, unless otherwise specificied, are based on the total number of families for each column. The percent in Information Visit is low because no attempt was made to schedule clients during the initial information visit.

** The Program does not schedule screening appointments for families which report having their own private physicians. This practice avoids implications of interference with private practice.

*** Families may have taken children to private physicians or clinics for screening and would not appear here.

Several features of this tabulation invite comment; however, only a few will be mentioned. As judged by the average number of contacts per family represented in each of the three waves, the intensity of the effort on the part of the outreach workers increased with each successive wave, i.e., from an average of 2.1 contacts to 3.2 for the last wave. Although it could be assumed that the families remaining after each successive wave are more resistant to participation in such a program, the results, as measured by appointments scheduled, increased from 2.8 per cent for the brief home visit

to 27 per cent for the last or "anything goes" wave. There was also an increase in the proportion of appointments kept which rose from 40 per cent for the brief home visit to 55 per cent for the last wave.

Earlier, it was suggested that each successive wave, beginning with the letters through the last wave require decreasing motivation and effort on the part of families and greater effort on the part of a program*. These results appear to confirm this hypothesis. Some further support is found in the response to the letters and telephone contacts. Although these methods were less productive in terms of appointments scheduled, the proportion of families keeping appointments was 55 and 71 per cent, respectively, for the letters and telephone contacts. These rates are equal to or greater than those of the last or "anything goes" wave and suggest that the more highly motivated families respond positively to minimal stimuli.

The principal difficulty with use of the telephone for outreach is that a large proportion of the families do not have phones--about two-thirds in this case. A second problem is the difficulty encountered in finding families at home during staff working hours--over one-third of the parents with telephones were not in or did not answer their phones. A third problem is the ease by which one can refuse whatever telephone callers may be purveying; over one-third of the families contacted by phone refused to consider the proferred services. Line (14) of the above table suggests that outright refusal is less likely in home visits, particularly brief visits which do not press for

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*There are numerous variables in such a study over which control is not easily exerted. In this instance, the investment of the aides in greater emphasis on their own role in terms of what they do, the time spent with clients, and the greater the self-determination in how they use their time may be mentioned as possible contributions to the increased effectiveness over the final four waves. Some further comment on this will be made later.

decisions. Finally, the central problem of the home visit is finding people at home. Although only 10 per cent of the "anything goes" contacts were made after 5 P.M., the fact that only 16 per cent of the clients, as compared to 28 and 45 per cent of the two earlier waves, were not at home during this wave speaks well for operational flexibility in use of outreach workers.

Each worker kept records of the time required for telephoning and making home visits. The average time spent in telephoning all families indicated as having telephones was eight minutes. Visits, including travel time, average 39 minutes per total number scheduled for a brief home visit; the average for visits in which child health histories were taken averaged 96 minutes or more than one and one-half hours; and the time spent on the "anything goes" wave which also required history taking during the home visit, averaged under one hour. Although the effort to contact families was intensified in the "anything goes" wave, as shown by the average of 3.1 contact attempts, the average time per family was about two-thirds less than that of the previous wave.

From one point of view, the results of the experiment are not excessively encouraging. Only 172 families (28.7%) of the 600 families scheduled screening appointments and, of this number, only 51.2 per cent kept the first appointment. As rows (4) and (5) in the preceeding table show, the percentage of families scheduling and keeping appointments increases with each successive home visit wave. Row (11) in the table also shows that 8 to 10 per cent of the families had had their children screened between each wave. All told, there were 26 such families which, if added to the 90 families keeping their first appointment, amounts to a total of 116 families, or 19 per cent of the 600 families in the study. Since there were no other outreach activities

directed at these families during the study period, it may be concluded, with caution* that they had their children screened as a result of the outreach effort. This suggests a build-up or incremental effect of the several waves. That this happened is shown in the following tabulation.

Method	(1) First Appointments Kept	(2) Screened Between Waves	(3) (1) & (2) Cumulative Frequency	(4) Per Cent Of 600	(5) Increment
Letters	6	3	9	1.5	3.0
Phone	17	1	27	4.5	3.1
Brief Visit	6	13	46	7.6	5.7
Visit & Health History	25	9	80	13.3	6.0
"Anything Goes"	36	0	116	19.3	
TOTALS	90	26			

Column (4) gives the cumulative percentage of families having their children screened at the end of each wave. The final column (5) shows the increment added by each wave. A steady increase between each successive wave appears in each instance except between the last two. The number of families having children screened between waves could well be larger than the frequencies shown in column (2). On the assumption that each successive wave must deal with the less motivated families, the results are encouraging. However, it could be that the most resistant families exempted themselves by asking that they not be contacted again, or simply by refusing the proffered service.

Phase Two Results: The results produced by the home visits, including the "anything goes" method, indicate that visits which speak directly to health

*The necessity for caution results from the fact that there is no way to assess the effect of contingent factors which might have resulted in the mothers' decision to have their children screened.

matters are more effective than letters, telephone contacts, or brief visits which simply inform and invite participation. However, the wave approach clouds the issue by the incremental effect of the preceding waves on any subsequent wave. Phase two of the study was carried out to determine the "pure" or individual effects of each outreach methods. A sample of 420 eligible families residing in a third census tract was drawn and assigned to six groups of 70 families each. Families which used the services of the County Health Department or who had had their children screened were excluded from the sample.

The outreach activity directed at each of these groups was as follows: Group 1 was sent three different letters over a six week period on health department stationery and signed by the outreach supervisor. These three different letters described the EPSDT program, encouraged participation in the program, and gave instructions as to how to go about it. In Group 2, attempts were made to inform all persons with telephones about the program and to encourage participation. Groups 3 through 6 were contacted by home visits which varied as follows: Group 3 received a brief visit during which the families were informed about the program. In Group 4, health histories were taken of all eligible children; in Group 5, health education* was provided in addition to information about the EPSDT program; Group 6 had health histories taken and were provided health education in areas where need or interest was shown. A residual group was formed of the families from Group 2, which did not have telephones with the addition of several families from the other groups which had not been contacted at the time the study ended for their group. This group for which "anything goes" procedures were used contained

*The CHWs had received health education training in such areas as nutrition, family planning, home accidents, dental hygiene, etc.

only 57 families.

The basic results from this phase of the study whown in the table below may be summarized as follows:

1. Letters: Nine letters to seven families were not delivered. Of the remainder, five families (7.9%) made appointments and four (80%) kept them.

2. Phones: Twelve of the 19 families with telephones were contacted; six (50%) made appointments, but none were kept.

3. Home visits: Attempted contacts ranged from 2.1 to 2.4 over the four home visits groups; however, half (49%) of the families were not at home when visits were made, and twelve per cent had moved. Best outreach results were obtained by the health history and education group: 48 per cent of the families contacted made appointments and 42 per cent kept them.

4. Anything Goes: Seventy-five per cent of the families were contacted and 58 and 68 per cent, respectively, made and kept screening appointments.

Method and Number of Families	Number and Per Cent Contacted		Average Contact Attempts	No. and Per Cent Contacts Apptd.		Per Cent Appts. Kept	Families ** Contacted Actually Screened	
	N	%		N	%		N	%
Letters (N=70)	63	90.0	---	5	7.9	80.0	9	14
Phone* (N=70)	18	25.0	2.1	6	50.0	0	11	61
Visits:								
Information (N=70)	20	28.6	2.1	3	15.0	66.7	4	20
Health Hx. (N=70)	30	42.9	2.2	3	10.0	0	6	20
Health Ed. (N=70)	25	34.3	2.3	5	20.8	0	6	24
Health Hx. & Ed. (N=70)	24	35.7	2.4	12	48.0	41.9	10	41
"Anything Goes" (N-57)	43	75.4	3.0	25	58.1	68.0	17	39

* Only 19 (27%) of the 70 families had telephones.

** From HSRI data system.

The following table which includes results from those case-finding methods used in both phases of the study gives the percentage of families, by method of contact, which scheduled and kept screening appointments for their children. The two omitted methods, as can be seen from the previous table, were Group 4 (health history only) and Group 5 (health education only). In these two groups, 20 and 24 per cent respectively, of those contacted (42.9 and 34.3 per cent of those on the list) were finally screened.

	WAVE					PURE				
Method	No. on List	% Contacted	First Apptments Made %	First Apptments Kept %	Percent Contacted Actually Screened	No. on List	% Contacted	First Apptments Made %	First Apptments Kept %	Percent Contacted Actually Screened
Letters	600	90.0*	1.8	55.0	1.0	70	90.0	7.9	80.0	14
Phone**	255	67.5	20.0	61.0	10.0	70	17.1	50.0	0.0	58
Visits										
Information	536	64.9	2.8	40.0	5.0	70	28.6	15.0	66.7	20
Hx & Ed.	427	42.6	13.1	44.6	18.0	70	35.7	48.0	41.7	41
Anything Goes	229	65.5	27.1	54.8	4.0	57	75.4	58.1	68.0	39

*The exact number of letters received by addressees is, of course, unknown.

**The table is to be read as follows: 67.5% of those not responding to letters (and having a phone) in the wave approach were contacted by phone, and of those contacted, 20% made appointments. 61.0% of those making appointments kept them. In the pure approach, 63.2% of those on the list to be phoned were contacted. 50% of those made an appointment, but none kept that first appointment.

Although the purpose of conducting the second phase of the study was to determine the effect of each individual method, a comparison with the wave results is instructive. For example, the wave approach showed no generally clear advantage over the single method approach in rate of contacts except in the case of visits providing information. The percentage of contacts made by the wave

approach--65 to 29 per cent. It might be assumed that the effects of the letters and telephone calls might have contributed to this; however, beyond this difference there is no concrete evidence to support the conclusion.

Each method under the pure approach was clearly more effective in the proportion of contacted families scheduling screening appointments. By method, the percentages of contacted families scheduling appointments ranged from two to five times greater than the same methods in the wave study. Except for families scheduling appointments via telephone contacts, the proportion of families keeping scheduled appointments for the pure approach equaled or exceeded those in the wave study. In both studies, the percentage of families keeping appointments scheduled in response to letters was high--55 and 80 per cent for the wave and pure approaches. Unfortunately, the response rates were very low, less than 10 per cent. Of the 28 wave families, scheduling appointments via telephone, 60 per cent kept them, but none of the six in the pure study did so. However, when reviewing HSRI data files at a later date, it was discovered that 61 per cent of those contacted actually were screened.

From the above comparisons, it seems evident that what the Community Health Workers called the "anything goes" approach is superior to all other approaches if the intent is to increase the probability that families will get an EPSDT screen for their children. Obviously, if the goal is only to inform families about EPSDT services, letters are the method of choice, if it can be assumed that letters do indeed adequately inform and that to inform is all that is required. It must be emphasized that there may be a bias in the results because the "anything goes" approach was the method which the Community Health Workers preferred. They were interested in this approach and highly motivated to make it work. The fact that the percentage of children showing (of those

contacted) is 41% under the Health History and Education method is evidence that, once the family is contacted (through flexible hours), the personal visit technique is effective.

Cost-Effectiveness of Methods

The purpose of this section is to examine the relative cost-effectiveness of the intensive or "anything goes" outreach method used in the wave and pure studies. First, an explanatory note on effectiveness and cost-effectiveness. Given specified tasks or goals of the same magnitude, the effectiveness of a method is the degree to which it achieves the stated goal. For example, assume there is an application of a different outreach method to each half of a population to achieve a specified number of screened families. The method producing the larger number of shows for screening is the more effective method. Given methods of similar effectiveness, the most cost-effective method is that method having the lower cost per show. A method may be inexpensive, letters for example, but virtually ineffective for getting families in for screening.

Comparing the appointments made and kept for the "anything goes" method for the wave and pure approaches in the above table, it appears clear that the independent effort of this method is more effective than the same approach when applied to the residual group of families remaining after four waves of different methods, i.e., 39 per cent of those contacted were finally screened in the pure approach versus only 24 per cent of those contacted in the wave approach. The way in which the two approaches compare with respect to cost effectiveness is made clear in the following table which provides an index of cost effectiveness and the dollar cost per family showing for screening.

	"Anything Goes" Method		
	(a) Pure Single Effect	(b) Wave Effect	(c) Cumulative Wave Effect
(1) Number of families	57	229	600
(2) Number keeping appointments	17	36	116
(3) Proportion of families keeping appointments	.3	.15	.19
(4) Total costs	$587.00	$1309.00	$7899.00
(5) Cost per family showing (3) ÷ (2)	34.53	36.36	68.09

The data shown above serves as a base, but is not sufficient for complete cost-effectiveness analysis.

Standardization to same size group (assuming that the same show rates would occur in the larger group for methods represented in columns (a), (b), and (c)) gives the following table:

	Pure (a)	Anything Goes Method Wave (b)	Cumulative Wave (c)
Projected number of families	600	600	600
Sample proportion being screened	.2983	.1572	.1933
Projected number being screened	179	94	116
Sample cost per show	34.53	$36.36	$68.09
Projected cost	6180.87	$3,417.84	$7,898.44
Projected cost per cent of penetration	$207.20	$217.41	$408.61

A precise answer to the most cost-effective technique is not possible because the rates of effectiveness differ. It is not known whether the incremental costs of increasing the rates for methods b and c are the same as the average cost per per cent of penetration or not. If we assume that method b is not comparable at all and will never be, and that the incremental costs for increasing rates of shows for method a would be the stated average, then method a is more cost-effective than method c.

The "anything goes home visit" method when used alone is not only more effective but also more cost-effective by about 5 per cent than when used in the wave approach. Since the families left in the final group of the wave study may be assumed as the most resistant, it is not surprising to find that the method was less effective and less cost-effective in the wave study. The last column of the above table provides cost-effective measures for the cumulative results of the wave study. Here, the individual effect of the "anything goes" method is more cost-effective by 1.97 times. In short, there appears to be little advantage to the wave approach, that is, no appreciable positive incremental effect occurs by its use. This does not mean, however, that letters and phones are not useful. Indeed, some exploration and experimentation in their use with intensive case-finding techniques which deal directly with responsible family members about the health of the family and its children is needed.

Case-finding Staffing Guidelines

The results of the Contra Costa study and the experience of the Barrio Clinic provides some basis for guidelines for case-finding staffing. How many outreach workers are required for an effective EPSDT program? The answer

depends upon how many children a program aims to screen, and the amount of effort required to get that number to the screening sites. The latter, in turn, depends upon the consequences of numerous variable factors which vary with conditions of place and time.

The CHWs spent a total of 98 hours, including travel time, in working with the families in the pure "anything goes" approach. There were 172 contacts and attempted contacts which averaged 34 minutes each for an average of 1.72 hours per family for the 57 families. Time estimates of the CHWs indicate that their time is used as follows:

Administrative paperwork	35%
Case finding	31
Follow-up	12
Clinic duty	12
Meetings, etc.	10

Assuming 165 hours worked per month, then the CHWs put approximately 50 hours (.31 x 165) per month in case finding. If an average of 1.72 hours per family is required for effective outreach, then each worker spending 50 hours per month on outreach may be expected to handle a case load of approximately 30 families per month (50 ÷ 1.72). Assuming a successful show rate of 30 to 35 per cent, then each worker would produce 10 families per month for screening. If families average 2.0 to 2.5 children each, this will amount to 20 to 25 children per month for each case finder.

The Barrio Clinic, early on in its operation, established a quota of 12 children screened per week per outreach worker. This included obtaining child and family history and performing the Denver Developmental Screening Test when children were below age six. It was soon apparent that some of the workers achieved the quota with relative ease while others found it more

difficult. An incentive payment of three dollars per child over the quota was initiated. Some of the workers, personable and pleasantly aggressive, exceeded the quota by 18 to 20 children per month. Others were never able to do so. Systematic exploration of such incentive plans is needed.

The Barrio outreach workers spend one-half time in outreach and on the average get 21 families per month in for screening. Using these figures and those noted earlier for Contra Costa, the following time estimates can be made for outreach with families:

	(1) Families Screened Per Month	(2) Monthly Outreach Hours Per Worker	(3) Families Screened Per Outreach Hour
Barrio	21	82.5	.25
Contra Costa	10	50.0	.20

The decimal fractions in the column (3) which result by the division of column (1) by column (2) converts to one family per four hours of outreach work for the Barrio, and one per five hours for Contra Costa. In sum, four to five hours can be taken as an estimate of the amount of time necessary per family for outreach.

In addition, direct outreach work with families can be effectively supplemented by working through various community agencies working with children and families in various organized activities such as schools, clubs, churches, summer programs, and so on. Contra Costa has made effective use of this; however, there is a point of diminishing returns since such groups can be relatively quickly covered, and many, perhaps most, families eligible for EPSDT services do not belong to such organized groups. The major use of

the community organizations approach is to increase program visibility and establish community credibility.

In the computer record kept for Contra Costa County, data exists about the siblings of children screened who have not shown for screening. The following comparison of ages reveals that many families who show for screening have additional children to be screened--who are generally older. If ways could be found to encourage these families to get the other children screened, the penetration rate could be increased with little additional effort.

A comparison by ages of the children in Contra Costa who were both screened and not screened.

Age	Screened		Siblings not screened (but families' have been contacted)	
	N	% of Total	N	% of Total
0-4	1558	47.5	301	14.4
5-11	994	30.3	849	40.7
≥12	728	22.2	936*	44.9
Total	3280	100.0	2086	100.0

* Of those ≥12 years of age, 64% were under age 17.

Conclusion

Working with captive population through schools or day care programs to deliver EPSDT services presents special problems not encountered by the more typical delivery programs, i.e., programs operated by local health departments. (EPSDT services delivered by individual providers present a different set of contingencies and have not been considered here.) Given the principal method of funding EPSDT services, work with captive population will not likely become widespread unless there is a great increase of cooperation between delivery

programs and schools.

The findings of this study indicate that, for initial encouragement of AFDC clients to use screening services:

1. Use of letters and telephones for case finding, though inexpensive, are limited in effectiveness. Too few (one-third) families have telephones, and letters do little more than inform. The phone calls showed a higher rate of refusal by clients to use the service.

2. Home visits which show concern and interest via health history taking and provision of health education, though more costly, is the most effective method of the several tried; that is, if the goal is to get children screened.

3. The results obtained by this case-finding experiment must be viewed in the light of the high commitment which the CHW's who carried out the work had for the method which proved most successful. But interest and enthusiasm are fundamental ingredients for most successful undertakings, and perhaps especially for EPSDT outreach.

4. It is estimated that four to five hours of case-finding field work per family screened (assume a 30% penetration rate) be used for estimating outreach staffing requirements.

5. High penetration rates (number screened ÷ number eligible for screening) require high rates of contact, appointment scheduling, and kept appointments. From a marketing point of view, the data on each of these must be kept in order to determine appropriate strategies for increasing the penetration rate.

APPENDIX J

Summary of Central County Outreach Report

written by

John Andrews, HSRI Staff Member

May, 1977

CENTRAL COUNTY OUTREACH STUDY

SUMMARY

In conducting outreach at an EPSDT clinic, there are two general approaches that can be used. The first are group approaches, such as screening children in the schools or through church groups. The advantage to this type of approach is that a large number of children can be screened with a small cost for outreach. The disadvantage is that certain groups of clients, such as children of pre-school age or non-church-goers, are not contacted. The second are approaches where families are contacted individually through such methods as letters or home visits. The advantage to this type of approach is that no groups of eligible clients are excluded. The disadvantage is the higher cost for outreach.

A study was conducted by the Contra Costa County Health Department into outreach methods where clients were individually contacted. This study, which was conducted at an EPSDT clinic in the central section of the county, examined three letter approaches and two home visit approaches.

The findings showed that letters without a date specified are not effective, that letters with a date specified were as effective and had as much impact as a limited form of home visit, that clients who do not respond to one method are not likely to respond if that same method is tried again, and that sending a card reminder shortly before the appointment date significantly increases the rate of shows for outreach methods that have a low expected rate of kept appointments. The limitations of these results are discussed, and further studies into several areas are recommended to clarify the effect of these outreach methods. Finally, issues involved in deciding upon an outreach program are examined.

CENTRAL COUNTY OUTREACH STUDY

From February to October, 1976, the Contra Costa Health Department conducted a study of outreach techniques. Outreach refers to persuading parents to bring their children to an EPSDT clinic for a medical screen. The study was conducted at the clinic in Pleasant Hill, which is located in the central section of Contra Costa County. The clients, a vast majority of whom were white, were all Medi-Cal eligible and receiving aid from the Social Services Department.

The study examined three areas of outreach. Phase I consisted of dividing a total of 549 clients into five groups, with each group receiving a different outreach method. Differences between groups in rates of shows for screening were then examined. Phase II examined the effect of three methods of following up on those clients who broke their appointments in Phase I. The third area examined was the effect of sending the clients a reminder shortly before their appointment. The methods used in each of these three areas of study are discussed below. The design of the study is illustrated in the two charts attached to this report.

OUTREACH METHODS

Phase I

For each of the five methods used in this phase, approximately 100 clients were randomly chosen. The five methods were as follows.

Group I - The clients in this group were sent letters which informed them that the screening service was available and encouraged them to make use of it. Since no appointment date was specified in this letter, the clients were to call and make their appointments. The letters were sent and signed by the

client's eligibility worker, who was the person in the Social Services Department who determined if the client was eligible for aid from that department. A copy of the letter which was sent is attached to this report.

Group II - The clients in the second group were also sent letters by their eligibility workers. The letters were identical to those sent to Group I, except that an appointment date for the client was specified. A copy of this letter is also attached to this report.

Group III - The same letter which was sent to Group II was also sent to the clients in Group III. The only difference in method was that, instead of being mailed separately, it was included with the client's check from the Social Services Department.

Group IV - An eligibility worker made home visits to the clients in this group. Before these visits were made, the clients received a letter or a phone call to inform them that the eligibility worker would make the visit. During these visits, the clients were encouraged to make use of the screening service. For those clients who were interested, an appointment was made.

Group V - The outreach method used with this group was the same as that for Group IV, except that the home visits were made by a home health aid from the Health Department instead of by the eligibility worker.

Phase II

Each of the clients who broke their appointments in Phase I were placed into one of the three follow-up methods in Phase II. The follow-up methods were as follows:

Approach I - Shortly after the broken appointment, an attempt was made to contact the client by phone to schedule another appointment. For the Groups

IV and V, the call was made by the same person who made the home visit. For Group II, the calls were made by a liaison worker of the Social Services Department. For Group III, the calls were made by the on-site research coordinator.

Approach II - Shortly after the broken appointment, the client received the same outreach method they received during Phase I.

Approach III - Six months after the broken appointment, the clients received the same outreach method as they had during Phase I.

Effect of Reminders

For each of the five methods used in Phase I, approximately 50% of clients who had an appointment were sent a reminder of their appointment date. These reminder cards were mailed two or three days before the appointment. All of the clients who were sent a reminder during Phase I and who broke these appointments were sent another reminder during Phase II. These second reminders were sent during Phase II regardless of whether or not the clients had actually been contacted with one of the three follow-up methods.

RESULTS

Phase I

Group I - Of the one hundred clients who were sent a letter, only four called to make an appointment. All four clients kept their appointments.

Group II - Of the one hundred letters mailed out, two were returned unopened. Of the 98 clients whose letters were not returned, 16 showed for screening, 11 cancelled their appointment, and 71 broke their appointment. No further attempt was made in any group to get in those clients that cancelled.

Group III - Of the one hundred clients chosen for this group, 26 were no longer eligible and therefore, did not receive a check from the Social Services Department. One check which was sent out was returned. Of the 73

clients who received a letter with their checks, 11 showed for screening, 12 cancelled, and 50 broke their appointments.

Group IV - Of the 98 clients in this group, seven were dropped because the eligibility worker became ill and was unable to make the home visit to these clients. Of the 91 clients for whom a home visit was attempted, 48 made an appointment. A total of 16 kept the appointment and 32 broke the appointment.

Group V - Of the 120 clients whom the home health aid attempted to contact, only 28 made an appointment. Of these 28, a total of 20 clients kept their appointments and eight broke.

The results for Phase I are summarized in the two tables below. The first table presents the number of clients in each category, and the second presents the percentage of clients in each category who were screened. For the clients who were sent letters, it was assumed that if the letter was not returned, then the client had received it and that a contact had been made.

Number of Clients - Phase I

	(no date) Group I	(date) Group II	(check) Group III	(H.H.A.) Group IV	(elig. W) Group V
In group	106	103	106	107	120
For whom method tried	100	100	100	91	120
Who were contacted	100	98	73	74	106
With an appointment	4	87	61	48	28
Who kept appointment	4	16	11	16	20

The sample size for each group, except Group V, was larger than the number for whom that approach was tried. This was because of substitution in the first four groups. If a client could be identified as having had a recent medical screen before the outreach was attempted, he was dropped from the study,

and a substitute was used in his place. For each group, a list of about twenty substitutes for each group was chosen at the same time the other group members were chosen.

Percent of Clients Screened - Phase I

	(no date) Group I	(date) Group II	(check) Group III	(H.H.A.) Group IV	(Elig' W) Group V
Of total in group	3.8%	15.5%	10.4%	14.9%	16.5%
Of those for whom approach tried	4.0%	16.0%	11.0%	17.6%	16.7%
Of clients contacted	4.0%	16.3%	15.1%	21.6%	18.9%
Of clients with appointment	100.0%	18.4%	18.0%	33.3%	71.4%

Chi-squares were performed on this data to determine if the differences between methods were statistically significant. There were three types of comparisons which could be made between the groups, and each type answers a different question about these outreach methods.

(1) The number screened of the number for whom that method was tried could be compared between groups. This comparison would indicate if there were differences in effectiveness between methods.

(2) The number screened of the number of clients actually contacted could be compared. A noticeable percentage of clients in the home visit groups had moved, could not be found, or were not at home at the time of the visit (18.7% of Group IV and 11.7% in Group V). Also, a large percentage (26%) of Group III were not sent a letter because they were no longer eligible for a Social Services check. This comparison would take this information into account and indicate if there were differences in impact between methods.

(3) The number screened of the number with appointments could be compared between groups. This comparison would indicate differences in rates of kept appointments, which are important in appointment scheduling and management of clinic resources.

For each of these three comparisons, tables with the Chi-square tests performed are presented in the appendix attached to this report. The tables indicate which groups were compared, the degrees of freedom, the Chi-square value needed to be significant at the .05 level, and whether or not that particular Chi-square was statistically significant at the .05 level. Also presented in this appendix is a more detailed explanation of how the following conclusions were drawn from the data .

Comparisons I and II

The results of the comparisons for effectiveness and impact (Comparison I and Comparison II) produced the same results and are therefore joined together here. The conclusions were as follows:

1. That a letter without an appointment date specified had significantly lower effectivess and less impact than any of the outreach methods studied.

2. That if a letter with the appointment date specified was sent by the eligibility worker, there was no significant difference in effectiveness or impact if it was mailed with the Social Services check or if it was mailed separately.

3. That if a home visit was made, there was no difference in effectiveness or impact if the visit was made by an eligibility worker or if it was made by the home health aide. Since eligibility workers are paid more than home health aides, this indicates that home health aides were more cost effective.

4. That it did not make a statistically significant difference in effectiveness or impact if a home visit was made or if a letter with the appointment date was sent.

A comment should be made on the nature of the home visits which were made. The home health aide began each home visit by asking the clients if they had a private physician. If they responded"yes", she terminated the interview. This happened for at least 54% of the clients the health aide actually contacted. This is probably why the health aide scheduled so few appointments (28 appointments from 106 contacts, for 26.4%). But a large percentage of those clients whom the

health aide scheduled kept their appointments (20 screened of 28 appointments, for 71.4%). There are two possible interpretations of this data. First, asking if the client had a private doctor may have, in effect, screened out those clients who had little interest in the EPSDT service, or second, after the client indicated that they had no private doctor, the health aide was very successful in persuading clients of the need for the service. For either of these two cases, it would appear that asking at the beginning of the home visit if the client had a private doctor was not an effective technique for "selling" the EPSDT services.

The eligibility worker performing the home visits received a self-instructional handbook on doing outreach. This was the only training or experience the eligibility worker had in presenting the EPSDT service to the clients. The eligibility worker scheduled more appointments (48 appointments of 74 contacts, for 64.9%) than did the health aide. This indicated that the eligibility worker used better techniques or that, because of the relationship between the clients and the Social Service Department, clients were more hesitant to refuse making an appointment. But the rate of kept appointments was lower (16 screened of 48 with appointments, for 33.3%) than that for the health aide. This would indicate that, even when an appointment was scheduled, the clients seen by the eligibility worker were frequently not sufficiently convinced of the need for screening.

This discussion has been intended to point out that the home visit approaches used here were somewhat limited by the technique used by the health aide and by the eligibility worker's lack of experience in "selling" the program. Therefore, the correct interpretation of the results of the Chi-squares would be that letters with an appointment date specified were as effective and had as much impact as a limited form of home visit. The effectiveness could possibly be improved by more experience, better "selling" techniques, and making visits to clients who do not have a physician. This might be determined from Medi-Cal records.

Comparison III

The final comparison between groups was on the number screened of the number with appointments. This comparison of rates of kept appointments is important because of the effect these rates have on clinic scheduling. The higher the percentage of kept appointments for an outreach method, the better the planning and utilization of clinic resources which can be made. The Chi-squares performed for Comparison III are included in the appendix. Also included is a detailed description of how the following conclusions were derived from the Chi-squares

Analysis of the Chi-squares for Comparison III indicated:

(1) That home visit approaches had significantly higher rates of kept appointments than did letter approaches.

(2) That home visits by the home health aide had a significantly higher rate of kept appointments than did the home visits by the eligibility worker.

(3) That sending a letter with the Social Services check or sending it separately did not make a difference in rates of kept appointments.

The finding that letters had a lower rate of kept appointments was not surprising. With the home visit apporaches, an appointment was made only for clients who indicated they wanted it, while with the letters with a date specified, an appointment was made for the client without contacting him. Only when a client called to cancel the appointment did the clinic know that he was not interested in screening. The probable reason for the high rate of shows for letters without a date specified (Group I) is that this was the only outreach method which required the client to initiate contact with the clinic to make an appointment. These clients were probably highly interested in the screening. Likewise, the clients scheduled by the home health aide were those who were probably highly motivated to show for screening, and this was why Group V had a higher rate of kept appointments than home visits by the eligibility worker.

This issue of techniques used in home visit methods has already been discussed in connection with Comparisons I and II.

The findings of Comparison III indicate that, of these five methods, the two using letters with an appointment date specified are the ones most likely to create problems in management of clinic resources.

Phase II

During Phase II, all clients who broke their appointments during Phase I were to be followed up with one of three outreach methods; telephone call to make a new appointment, the same approach tried during Phase I was tried shortly after the broken appointment, or the same approach tried during Phase I was tried six months after the broken appointment. Since none of the clients in Group I broke their appointments, the group was not included in the Phase II analysis. Since Group V had so few clients who broke appointments (only eight), they were divided into the first two of the Phase II approaches, and none received the outreach six months after the broken appointment. If a client was sent a reminder and broke his appointment during Phase I, he was sent another reminder for an appointment during Phase II. The reminder was sent during Phase II even if the Phase II outreach method was not successful in contacting the client. The reasons that some attempts to contact were not successful were that the client was not at home or his phone was disconnected. This group, not contacted by phone or home visit but sent a reminder anyway, constituted a fourth outreach method used in Phase II.

The following table summarizes the results of Phase II.

Groups	Approach I (Phone Call)	Approach II (Same method Soon After)	Approach III (Same method 6 months later	Approach IV (Not Contacted Sent Card)	Group Totals	
Group II Number in Group Number Screened	20 2	22 0	15 1	4 1	61 4	6.6%
Group III Number in Group Number Screened	15 2	16 0	9 2	2 0	42 4	9.5%
Group IV Number in Group Number Screened	9 4	7 1	7	2 0	25 6	24.0%
Group V Number in Group Number screened	2 0	4 1	0 0	2 2	8 3	37.5%
Total Number in Group Number Screened Percent	46 8 17.4%	49 2 4.1%	31 4 12.9%	10 3 30.0%		

First, notice that for Groups II, III, and IV, the number of clients in the four approaches do not add up to the number of broken appointments for those Groups. This was because, by the time Approach III (six months after broken appointment) was begun, a number of clients were no longer eligible for benefits from the Social Service Department. These clients were dropped from the study. Thus, there were only 31 clients in Approach III instead of the anticipated 48.

The approach that was least effective was trying the same outreach method used with the client in Phase I soon after the broken appointment. The next least effective approach was using the same approach six months after the broken appointment. The number of clients in Approach IV was too small (only ten) to be considered reliable, but it is interesting to note this approach (sending only a reminder card for the new appointment) had the highest percent screened. Approach I (a phone call) had the highest percent screened of the three approach

that had a sample size of at least 30. However, it would not be accurate to say that phone calls are more effective than letters or home visits. Rather, the data indicates that, if a client does not respond to an outreach method once, he is unlikely to respond if that same method is tried again. The second finding from this data was that, if the same method is used again, it will be less effective if it is used soon after the broken appointment.

It should also be noted that, of the clients that broke appointments, the ones who received home visits were more likely than those receiving letters to respond to a follow-up approach. This would be expected because, as discussed before, the appointments that were "broken" by the clients in the letter groups were made for the clients without contacting them.

Effect of Pre-Screen Reminders

During Phase I, approximately 50% of the clients in each group who had an appointment scheduled were sent a reminder shortly before the date of the appointment. The reminders were sent so as to arrive, at most, two days before the appointment. The following table summarizes the data on the use of reminders during Phase I.

Use of Reminders - Phase I

Groups	Number Sent Reminders	Percent Screened Of Those Sent Reminders	Number Not Sent Reminders	Percent Screened Of Those Not Sent Reminders
I(no date letter)	2	100%	2	100%
II(date specified)	45	24.4%	42	11.9%
III (in chec.	27	22.2%	34	14.7%
IV (HHA)	22	50.0%	26	19.2%
V (Elig. W	14	71.4%	14	71.4%
Total	110	36.4%	118	22.9%

This data indicates that, for the three groups where the eligibility worker gave a specified appointment date, the rate of shows for those sent a reminder was about twice that for those not sent a reminder. The rates of shows for Group I and Group V were not effected by the use of reminders. The probable

reason for this is, as has been discussed before, that the clients in these two groups who had an appointment were highly interested in the screening service or highly motivated by the health aide. Whatever extra "push" the reminder provided did not make much difference for these particular clients since they were already highly likely to come for screening.

The following table presents the effect of the reminders used during Phase II. Every client in Phase I who received a reminder and who broke their appointment, was sent another reminder during Phase II. The following table presents the results of the effect of these reminders.

Use of Reminders - Phase II

	Number Clients Sent a Reminder	% of These Screened	Number Not Sent a Reminder	% of These Screened
Approach I (phone call)	15	20%	32	18.7%
Approach II (Same approach soon afterwards)	22	9.1%	26	0.0%
Approach III (Same approach six months later)	15	13.3%	16	12.5%
Approach IV (Not contacted; sent card)	10	30.0%	0	-
TOTAL	62	16.13%	74	10.81%

It is apparent in examining this table that, for Phase II, there was little difference in rate of shows between clients that were sent a reminder as clients not sent a reminder.

Chi-squares were performed on the data on reminders for Phase I. These Chi-squares and the analysis of them appear in the appendix. From these Chi-squares and from the above two tables, the following conclusions were reached:

(1) That reminders can significantly increase the rate of shows when used with an outreach method which has a low expected rate of kept appointments.

(2) That if a client does not show for screening after one reminder is sent, then it is unlikely that another reminder will have any effect.

(3) The effectiveness of reminders may depend on the population with which they are used.

DISCUSSION

It was found that the letter without an appointment date specified method had a high rate of kept appointments. Comparison of the present study with the previous one indicated that this was the case for a new or an established clinic working with either a White or Non-White population. But its low rate of penetration indicates that a letter without a date specified is not an effective method of outreach.

The results for the four remaining outreach methods indicated that there was no difference in effectiveness or impact between letters with an appointment date specified and limited home visits. Since letters are far less costly and time consuming than home visits, letters with a date specified represent a potential way of sharply reducing the costs of outreach. But there are several reasons to question the validity and applicability of this finding.

1. As previously discussed, the lack of experience of the eligibility worker and the technique used by the health aide in making the visits, may have caused the rate of shows for the home visit methods to be lower than would otherwise be expected. Therefore, the letters may not be as effective as home visits.

2. All letters were sent by the eligibility workers. Therefore, this study can not make a statement as to how effective letters with a date specified would be if sent by the clinic itself. It is possible that the date being specified and the eligibility workers' sending the letters were factors which interacted to produce the effectiveness found. The effect of contacting the clients through a welfare agency is an area that deserves further study.

3. The finding that home visits were not as effective in the previous study as they were in the present study illustrates the possibility that letters with the date specified are effective only with certain clients and/or clinic characteristics. Some factors that should be examined in future studies for their relationship to outreach methods are ethnicity of clients, clients' attitudes toward preventive health care, availability of health care for the poor, enrollment in prepaid health plans, and length of time the clinic has been in operation.

4. While the letter approach is cheaper to execute than home visits, its low rate of kept appointments will cause an increase in the clinic's screening costs. To determine if these letters are in fact cost-effective, further studies must find out how much of the cost saving of using letters is lost because of the effect of its low rate of kept appointments on clinic operating costs.

Regardless of any suspicions of the validity or limitation of the findings of this study, the advantages to be gained if they are proven to be accurate warrant further experimentation into the use of these letters. In fact, even if they are shown not to be as effective as home visits, letters with the date specified can still be of great use to a clinic if it is shown that (1) they can get in an appreciable percentage of the population, and (2) the additional operating costs due to the low rate of kept appointments does not exceed the cost saving of contacting clients by letter.

The results on use of reminders indicated that reminders can be an effective way of increasing the penetration rate of an outreach method which has a low expected rate of kept appointments.

The results of the Phase II outreach methods and reminders indicated that, if the client does not come in for screening after a certain outreach technique is tried, then he is not likely to come in if that same technique is tried again.

Chi-Squares Performed - Comparison I
Number Screened of the Number Attempted

Groups Compared	Chi-Square	df	Chi-square Value Needed For Significance at .05	Significant at .05
A. Groups I vs. II vs. III vs. IV vs. V	11.34	4	9.49	Yes
B. Groups I vs. II vs. III vs. IV	10.34	3	7.82	Yes
C. Groups I vs. II vs. III	7.84	2	5.99	Yes
D. Groups II vs. III vs. IV	1.82	2	5.99	No
E. Groups I vs. II	6.72	1	3.84	Yes
F. Groups II vs. III	1.07	1	3.84	No
G. Groups II vs. IV	0.09	1	3.84	No
H. Groups III vs. IV	1.70	1	3.84	No
I. Groups IV vs. V	0.03	1	3.84	No
J. Letters (Groups I, II and III) vs. Home visits (Groups IV and V)	4.92	1	3.84	Yes
K. Letters with date specified (Groups II and III vs. Home visit (Group IV and V)	1.00	1	3.84	No

Chi-Square Performed-Comparison II
Number Screened of Number Contacted

Groups Compared	Chi-Square	df	Chi-square Value Needed For Significance at .05	Significant at .05
L. Groups I vs. II vs. III vs. IV vs. V	13.51	4	9.49	Yes
M. Groups I vs. II vs. III vs. IV	12.63	3	7.82	Yes
N. Groups I vs. II vs. III	8.72	2	5.99	Yes
O. Groups II vs. III vs. IV	1.26	2	5.99	No
P. Groups I vs. II	6.98	1	3.84	Yes
Q. Groups II vs. III	0.05	1	3.84	No
R. Groups II vs. IV	0.78	1	3.84	No
S. Groups III vs. IV	1.05	1	3.84	No
T. Groups IV vs. V	0.21	1	3.84	No
U. Letters (Groups I, II, and III) vs. Home visits (Groups IV and V)	6.27	1	3.84	Yes
V. Letter with date specified (Groups II and II vs. Home visits (Groups IV and V)	1.06	1	3.84	No

Likewise, if a reminder did not work the first time, it was not likely to have any effect if it is sent out again.

The results of these two comparisons were very similar. The variation from expected values expressed by the statistically significant Chi-square was primarily due to the small number of shows in Group I. This can be seen by comparing the values of Chi-squares including Group I with those excluding Group I (Chi-square B with Chi-square D; Chi-square C with Chi-square F; Chi-Square J with Chi-square K; Chi-square M with Chi-square O; Chi-square N with Chi-square Q; and Chi-square U with Chi-square V).

Analysis of these two Chi-square tables indicated:

1. That a letter without an appointment date specified had significantly lower effectiveness and less impact than any of the outreach methods studied (Chi-squares C, E, M, N, P, and U).

2. That if a letter with the appointment date specified was sent by the eligibility worker, there was no significant difference in effectiveness or impact if it was mailed with the Social Services check or if it was mailed separately (Chi-squares F and Q).

3. That if a home visit was made, there was no difference in effectiveness or impact if the visit was made by an eligibility worker or if it was made by the home health aid (Chi-squares I and T).

4. That it did not make a statistically significant difference in effectiveness or impact if a home visit was made or if a letter with the appointment date specified was sent (Chi-squares D, G, H, K, O, R, S, and V).

Chi-Square Performed-Comparison III
Number Screened of Number With Appointments

Chi-Square Performed-Comparison III
Number Screened of Number With Appointments

Groups Compared	Chi-Square	df	Chi-square Value Needed For Significance at .05	Significant at .05
W. Groups II vs. III vs. IV vs. V	33.77	3	7.82	Yes
X. Groups II vs. III vs. IV	4.82	2	5.99	No
Y. Groups II vs. III	0.00	1	3.84	No
Z. Groups II vs. IV	3.82	1	3.84	No
AA. Groups III vs. IV	3.37	1	3.84	No
BB. Groups IV vs. V	10.29	1	3.84	Yes
CC. Letters (Groups I, II, and III) vs. Home Visits (Groups IV and V).	18.81	1	3.84	Yes

It should be noted for Chi-squares Z and AA that while the values were not significant at the .05 level, they just barely failed to be significant at .05 and were significant at .1. Chi-square X was also significant at .1.

Analysis of the Chi-squares for Comparison III indicated:

(1) That home visit approaches had significantly higher rates of kept appointments than did letter approaches (Chi-squares W, X, Z, AA, and CC).

(2) That home visits by the home health aid had a significantly higher rate of kept appointments than did the home visits by the eligibility worker (Chi-square BB).

(3) That sending a letter with the Social Services check or sending it separately did not make a difference in rates of kept appointments (Chi-square Y).

Chi-Square Performed
Sent Reminders vs. Not Sent Reminders

Chi-Square Performed
Sent Reminders vs. Not Sent Reminders

Groups Compared	Chi-square	df	Chi-square Value Needed For Significance at .05	Significant at .05
EE. Total Sample (Groups I - V)	4.98	1	3.84	Yes
FF. All methods used by eligibility workers (Groups I - IV)	6.17	1	3.84	Yes
GG. All letter methods (Groups I - III)	2.48	1	3.84	No
HH. Letter methods with date specified (Groups II and III)	2.71	1	3.84	No
II. Home visit methods (Group IV and V)	3.30	1	3.84	No
JJ. Group II	1.52	1	3.84	No
KK. Group IV	3.79	1	3.84	No

For the total sample and for all methods used by the eligibility workers, sending reminders significantly increased the rate of shows (Chi-square EE and FF). Most of the reminding Chi-squares were not quite significant at the .05 level, but all of them, except JJ and GG, were significant at the .1 level, indicating in each case a higher rate of shows for those receiving reminders.

NOTICE OF HEALTH BONUS FOR YOUR CHILD

DEAR PARENT:

HAVE YOU TAKEN YOUR CHILD FOR A HEALTH EXAMINATION THIS YEAR? YOU MIGHT THINK THAT YOUR CHILD DOES NOT NEED IT BECAUSE HE LOOKS HEALTHY TO YOU. BUT DO YOU REALLY KNOW? SOME ILLNESSES CANNOT BE DETECTED IN THEIR EARLY STAGES WITHOUT A HEALTH CHECK-UP. SOME ILLNESSES CAN ALSO BE PREVENTED BY GETTING IMMUNIZATIONS AND CARRYING OUT GOOD HEALTH PRACTISES IN THE HOME.

THE CONTRA COSTA COUNTY HEALTH DEPARTMENT HAS SET UP A SPECIAL HEALTH SERVICE CLOSE TO YOUR HOME TO HELP YOU TO KEEP YOUR CHILD IN THE GOOD HEALTH WE ALL THINK IS IMPORTANT. THE SPECIAL HEALTH SERVICES WILL INCLUDE A FREE CHECK-UP FOR YOUR CHILDREN THAT INCLUDES URINE AND BLOOD TESTS, AND HEARING AND VISION EVALUATIONS. INFORMATION IS AVAILABLE ABOUT GOOD HEALTH PRACTISES, TRANSPORTATION, TRANSLATION ASSISTANCE, AND REFERRAL FOR MEDICAL TREATMENT, IF NEEDED.

REMEMBER: PROVIDE YOUR CHILD WITH A HEALTH BONUS BY HAVING A HEALTH EXAMINATION BEFORE HE/SHE BECOMES ILL. PROTECT YOUR CHILD BY CALLING FOR AN EXAMINATION RIGHT NOW:

PHONE: 937-4100 EXTENSION 201

ADDRESS: 85 CLEAVELAND ROAD
ROOM 201
PLEASANT HILL

YOURS VERY TRULY,

ELIGIBILITY WORKER

NOTICE OF HEALTH BONUS FOR YOUR CHILD

DEAR PARENT:

HAVE YOU TAKEN YOUR CHILD FOR A HEALTH EXAMINATION THIS YEAR? YOU MIGHT THINK THAT YOUR CHILD DOES NOT NEED IT BECAUSE HE LOOKS HEALTHY TO YOU. BUT DO YOU REALLY KNOW? SOME ILLNESSES CANNOT BE DETECTED IN THEIR EARLY STAGES WITHOUT A HEALTH CHECK-UP. SOME ILLNESSES CAN ALSO BE PREVENTED BY GETTING IMMUNIZATIONS AND CARRYING OUT GOOD HEALTH PRACTISES IN THE HOME.

THE CONTRA COSTA COUNTY HEALTH DEPARTMENT HAS SET UP A SPECIAL HEALTH SERVICE CLOSE TO YOUR HOME TO HELP YOU TO KEEP YOUR CHILD IN THE GOOD HEALTH WE ALL THINK IS IMPORTANT. THE SPECIAL HEALTH SERVICES WILL INCLUDE A FREE CHECK-UP FOR YOUR CHILDREN THAT INCLUDES URINE AND BLOOD TESTS, AND HEARING AND VISION EVALUATIONS. INFORMATION IS AVAILABLE ABOUT GOOD HEALTH PRACTISES, TRANSPORTATION, TRANSLATION ASSISTANCE, AND REFERRAL FOR MEDICAL TREATMENT, IF NEEDED.

SO THAT YOU CAN TAKE ADVANTAGE OF THIS SPECIAL SERVICE, AN APPOINTMENT HAS BEEN SCHEDULED FOR YOUR CHILD_____
ON_____ AT_____.

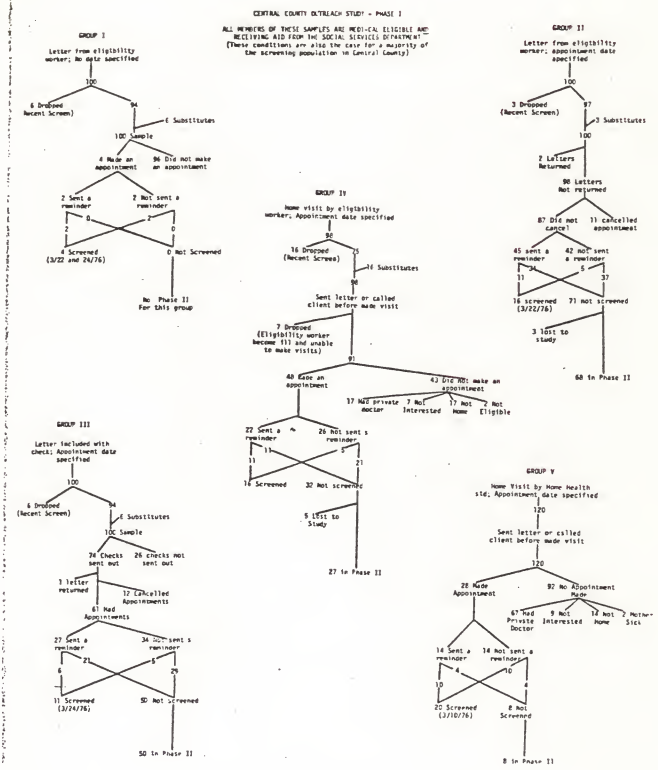
REMEMBER: PROVIDE YOUR CHILD WITH A HEALTH BONUS BY KEEPING THE ABOVE HEALTH EXAMINATION SO YOU CAN PROTECT YOUR CHILD AND PREVENT HIM/HER FROM BECOMING ILL.

PHONE: 937-4100 EXTENSION 201

ADDRESS: 85 CLEAVELAND ROAD
ROOM 201
PLEASANT HILL

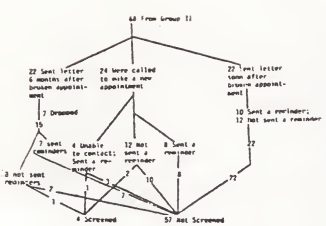
YOURS VERY TRULY,

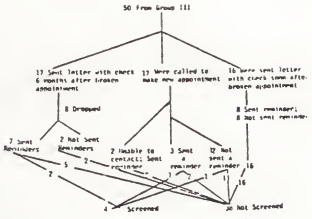
ELIGIBILITY WORKER

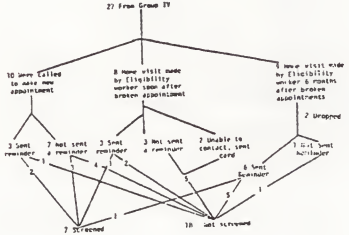

CENTRAL COUNTY OUTREACH STUDY - PHASE I
ALL MEMBERS OF THESE SAMPLES ARE MEDICAL ELIGIBLE AND RECEIVING AID FROM THE SOCIAL SERVICES DEPARTMENT
(These conditions are also the case for a majority of the screening population in Central County)
GROUP I
Letter from eligibility worker; No date specified
100
6 Dropped (Recent Screen)
94
6 Substitutes
100 Sample
4 Made an appointment
96 Did not make an appointment
2 Sent a reminder
2 Not sent a reminder
0
2
2
0
4 Screened (3/22 and 24/76)
0 Not Screened
No Phase II For this group
GROUP II
Home visit by eligibility worker; Appointment date specified
96
16 Dropped (Recent Screen)
16 Substitutes
96
Sent letter or called client before made visit
7 Dropped (Eligibility worker become ill and unable to make visits)
97
40 Made an appointment
43 Did NOT make an appointment
17 Not private doctor
7 Not Interested
17 Not Home
2 Not Eligible
22 Sent a reminder
26 Not sent a reminder
11
11
5
21
16 Screened
32 Not screened
5 Lost to Study
27 in Phase II
GROUP III
Letter included with check; Appointment date specified
100
6 Dropped (Recent Screen)
94
6 Substitutes
100 Sample
74 Checks sent out
26 checks not sent out
3 letter returned
12 Cancelled Appointments
61 Had Appointments
27 Sent a reminder
34 Not sent a reminder
6
21
6
28
11 Screened (3/24/76)
50 Not Screened
50 in Phase II
GROUP II
Letter from eligibility worker; appointment date specified
100
3 Dropped (Recent Screen)
97
3 Substitutes
100
2 Letters Returned
98 Letters Not returned
87 Did not cancel
11 cancelled appointment
45 sent a reminder
42 not sent a reminder
34
11
5
37
76 screened (3/22/76)
71 not screened
3 lost to study
68 in Phase II
GROUP V
Home Visit by Home Health std; Appointment date specified
120
Sent letter or called client before made visit
120
28 Made Appointment
92 No Appointment Made
67 Had Private Doctor
9 Not Interested
12 Not home
2 Mother Sick
14 Sent a reminder
14 Not sent a reminder
4
10
10
4
20 Screened (3/10/76)
8 Not Screened
8 in Phase II

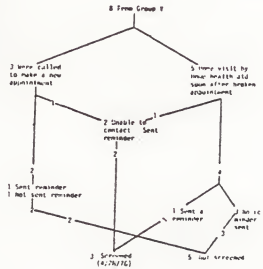
CENTRAL COUNTY OUTREACH STUDY - PHASE II

ALL CLIENTS IN PHASE II BROKE THEIR APPOINTMENTS IN PHASE I









APPENDIX K

Planning Information for Central County Outreach Project

CENTRAL COUNTY

EVALUATION

OUTREACH PROJECT

The Outreach Project began December 23rd with the organization of an ad hoc planning group. An overview of the research design was presented by Rod Gardner, Human Development Associates, who then agreed to encapsulate the project in a written outline. In order to implement the research design the following tasks needed to be accomplished:

- determination and identification of population to be screened.
- selection of 5 populations of 100 children.
- determination of usual Health Department screening procedures and practices in Central County.
- determination of usual Social Service (Welfare Department) responsibilities in notifying EPSDT eligibles about screening services.
- assignment of responsibilities for outreach process for each population personally contacted.
- choosing personnel to carry out door-to-door outreach assignment tasks.
- Choosing personnel to write, duplicate, sign and mail letters and forms.

The planning group will continue to meet to monitor Outreach Project Tasks: See attachments for minutes.

To accomplish the above, issues needed to be conceptualized, discussed and resolved so that outreach processes could be created. Because the Central County evaluation project is not geographically defined nor census tract specific, another method of identifying and choosing a research population needed to be determined. The alternative method chosen required the identification of Medicaid eligible families, with children, who resided in census tracts near the Central County Health

Department screening facility. Obtaining the Social Service computer print-out of Medicaid eligible families was possible because of a recently formalized contractual arrangement between the Health Department and the Social Services Department.

Specific census tracts having large numbers of Medicaid families were chosen. The print-out was requested in December and obtained the last week in January.

The five populations would be given outreach protocols as follows:

Population 1) Personal letter from Eligibility Worker, but with no appointment time specified.

Population 2) Personal letter from Eligibility Worker with appointment time specified.

Population 3) Eligibility Worker will personally refer clients to a clinic and make a specific appointment.

Population 4) Home visit by Home Health Aide who will make a specific appointment for clients.

Population 5) Special mailer with Welfare checks and with an appointment specified.

Each population will be scheduled into especially designated March clinics: Each clinic is an all day clinic.

Wed: March 10, Eligibility Worker personally makes the clients' appointment.

Tues: March 16, Home Health Aide personally makes the clients' appointments.

Mon: March 22, Letter from Eligibility Worker; appointment specified.

Wed: March 24, Letter with specific appointment mailed out with voucher.

For the population in which the Eligibility Worker mails a letter to clients with no appointment specified, screens will be scheduled into the 22nd and 24th clinics as this population calls the Health Department.

For the population in whic letters with appointments would be included with vouchers, Rod Gardner will obtain e letter of introduction from Dr. Orlyn Wood, Health Officer. This letter will ask that he be allowed to assist the Auditor with the final hand check of voucher envelopes. At this time, screening offers would be included to a specifically chosen population.

The type of personnel who did outreach in Richmond and Brentwood are unavailable to Central County. Outreach will not be done by Community Health Aides but by personnel who usually does outreach activities in the Central County. For the Health Department home visits will be done by e Home Health Aide. For Social Services, an Eligibility Worker will do home visits although Social Workers usually are the ones who make home visits.

The planning group met to create guidelines for outreach activities.

A definition of "contact" was included as well as the conditions whereby e substitution in the random sample could be made. In order to clear the lists, each child chosen was checked against Health Department Child Health Records to see if they had recently been screened. The Health Department records are made by family name and individual child's name. Often, these names are not the same.

Although 125 names had been chosen to assure an adequate sample of 100, it was found that approximately 10% of the names chosen on the lists had been recently screened. This was higher than had been expected. Substitutions could only be allowed according to e rigid interpretation of guidelines so as to maintain the necessary number in the research sample.

One-half of those given specific clinic appointments would also be m ailed reminders. This sub-group would be chosen on an "every other one" basis.

Because the population was chosen from census tracts in which private practitioners had many patients of record, every effort was made to keep them informed.

This was accomplished by:

1) The Central County Outreach Project was informally presented at the Central County Pediatric Breakfast by Dr. Khanna (Community Health Services Chief), Dr. Baukol (Maternal Child Health Chief) and Dr. Sehring (Child Health and Disability Prevention Program Director).

2) The mailing of an information letter to all practitioners in Central County

3) An offer to meet and discuss the research design with practitioners was made.

4) A mailing of results of the referral evaluation to all practitioners in Central County was done

5) By informally considering a way in which Health Department personnel could assist private practitioners to screen their own patient caseloads within their own setting.

The general informational letter offering the screening service was re-drafted. Language was revised to address the following issues:

1) The word "Bonus" was to be eliminated as this would be misinterpreted by clients to mean money instead of health services.

2) "Physical examination" was changed to "health check" or "health examination". This language change would help differentiate health and wellness care from acute episodic care.

3) Screening was described so as to educate clients to its meaning.

4) Screening tests such as urine and blood, hearing and vision were specified. If children has visited a physician and these specific tests were not included in the examination, the child should be re-screened.

The planning group reconvened on call to resolve problems that occurred as the various processes were implemented. It was found that the print-out included addresses and census tract numbers but did not include the city or zip code. This was a clerical task to be completed by hand. Language for the reminder card needed to be created. A card was chosen instead of a letter, as letters are often unopened and/or unread. A few young women in the screening sample were on case grants individually; that is, they themselves were named as recipients of cash grants. This indicated that they were most likely pregnant. Should they be substituted for? It was decided that this situation would occur in any outreach effort. These young women would be screened and referred, if pregnant, to an ongoing source of pre-natal care.

Further clarification of the guidelines for substitutions was deemed necessary:

1) If parent and child had been seeing a physician for wellness care, using that source of care and will be returning in the near future: substitute.
2) If child is under medical supervision for an ongoing chronic or acute health problem: substitute.
3) If parent and child have been recently screened by the Health Department: substitute.
4) Do not substitute if child is being seen only for acute episodic illness care.

Good judgements on the part of the Home Health Aide and Eligibility Worker are necessary.

The Social Service Department must give clients notification if workers plan home visits. Sanctions are imposed upon the Social Service Department if prior notification is not given. Thus a phone call or letter indicating the eligibility worker will visit must precede the visit. The Health Department does not have to abide by such regulations and they will follow their usual procedure in home visiting.

Allowances were made for families with more than one child. If mothers wanted another child substituted for the one chosen in the sample population, and was adament, this could be done. However, to avoid the temptation for mothers to substitute, other children in families would be offered a definite clinic date at another time. If mothers wanted to know how and why a specific child was chosen, they would be told that the Health Department was recruiting children for wellness care and for health check-ups and "Johnny" was randomly chosen.

Staffing for the clinic dates was given careful consideration so as to avoid the queueing problem. From prior experience it was known that personal contact with home visits would produce the greatest number of children to be screened. The receipt of only a letter would produce the less children. Staffing would be scheduled to cover the clinic dates accordingly.

In the population contacted by the Home Health Aide, approximately 85% of the children in the random sample had been screened by their private practitioner. The Home Health Aide had used all the substitutions available to her. Has our letter to private physicians describing our Outreach Project stimulated them to aggressively screen and give wellness care to their patient caseload? Out of 125 children chosen, the Home Health Aide had made only 6 or 8 appointments. She made 10 - 12 visits per day. Perhaps the Home Health Aide was incorrectly substituting or misinterpreting the guidelines.

All letters, records and contacts that were made in the process of informing and motivating Medicaid eligibles to utilize screens would be documented and copied for inclusion in the client's Social Service file. This would assure Social Service EPSDT compliance when the Federal DHEW Region IX Office's Medical Services Administration audited county files under Title XIX EPSDT penalty regulations.

As the Eligibility Worker and Home Health Aide visit their populations, a log will be kept of each attempt to contact the client and the outcome of that attempt.

As the outreach process continues, the planning group will meet to clear up problems. The next meeting will be Thursday, March 4th. The March clinics will be monitored, described and documented.

JF:ca
2/19/76

GUIDELINES FOR CONDUCTING OUTREACH ACTIVITIES

1. DEFINITION OF "CONTACT":

The following three elements will constitute the meaning of an "outreach contact":

a. At least a home visit to every client included in the study;
b. A phone call (if the client has a phone) to announce the visit time;
c. A letter to announce the visit time (where the client does not have a telephone), but no phone call.

2. HOW MANY VISITS?

a. A maximum of three (3) home visit attempts should be made for each client in the study group. If the person can not be contacted within that number of visits, discontinue outreach efforts and document as "can not locate".

b. If the client has moved, the following procedure should be used:

1. Try to locate through a call to the client's usual Eligibility Worker.
2. If no new address is recieved from the EW, close the case and document.
3. If a new address is obtained and the address is located in census tracts 23, 24, 25, 30, 36.1, 36.2, 37.1, or 37.2, then continue outreach efforts.
4. If a new address is obtained from the EW but the address is outside of census tracts 23, 24, 25, 30, 36.1, 36.2, 37.1, or 37.2, then close the case for study purposes and document.

3. SUBSTITUTES FOR CLIENTS ON THE OUTREACH LISTS:

Every attempt should be made to contact the persons indicated on the outreach study lists (containing 100 names). However, under the following three (3) conditions, substitutes may be made for the persons indicated on the list:

a. When the child is receiving continuous well care, or, receiving continuous care for a serious chronic condition;

b. When the child has been screened by his own private physician within an acceptable period of time, as defined by the Health Department protocal for that child's age group;

c. If the home where the child lives has a dog which prevents the outreach person from approaching the house.
(Also see 4.d. below for a situation where another child from the same family may be substituted for the child indicated on the list.)

4. OUTREACH APPROACH:
The following guidelines should be observed when making the outreach contacts:

a. Present the screening service in an enthusiastic manner, but do not use "hard sell" approach or give the impression that the clinic visit is manditory.

b. If client vigorously opposes the clinic appointment, terminate the interview and document reason for refusal.

c. If client is not at home, leave a note indicating a time for a return visit and instructions to call the outreach person if the new time is inconvenient for the client.

d. If the client questions why a specific child from the family has been chosen for the appointment, say that only one child from each family was selected and the choice was an arbitrary one. In addition, tell the client that other children from the same family can be scheduled at other times.

If the client insists on substituting another member of the family for the scheduled child, ask the mother why she wants to make the substitute. If she wants to substitute an ill child for the one on the list, encourage her to take the child immediately for medical care. Also inform the mother that ill children are not eligible for this particular service. If the reason for wanting to substitute is not illness related and the mother still insists, another child in the same family may be substituted. However, intra family substitutes should be made only under the above conditions.

5. SCHEDULING APPOINTMENTS:

Each outreach person has the responsibility for scheduling the appointment for the day set aside for the respective study group's screening. The client has the option of choosing either an A.M. or a P.M. appointment time, on the basis of what would be more convenient for her. If a client states that she can not possibly bring the child to the clinic on the assigned day for screening (without an act of God), the client's child is to be scheduled for one of the normal Medi-Screening clinics. Rod Gardner will track these few cases to see if the appointment was kept.

6. DOCUMENTING ACTIVITIES:

The outreach person should document activities carefully and completely, so the information can be used for evaluation purposes. As a minimum, the following information should be noted:

a. Indicate the day of the contact, the type of contact made, the result of the contact, and what action was taken by the outreach person (e.g., scheduled appointment, person being removed from the study population and replaced by a substitute, case closed, etc.).

b. Also, record the exact time it takes to make a phone call, home visit, attempt (when no one was given information about the service), a completed home visit (when client is given the information about the service), or for any other activity related to outreach.

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(Also see 4.d. below for a situation where another child from the same family may be substituted for the child indicated on the list.)

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a. Indicate the day of the contact, the type of contact made, the result of the contact, and what action was taken by the outreach person (e.g., scheduled appointment, person being removed from the study population and replaced by a substitute, case closed, etc.).

b. Also, record the exact time it takes to make a phone call, home visit, attempt (when no one was given information about the service), a completed home visit (when client is given the information about the service), or for any other activity related to outreach.

CONTRA COSTA COUNTY

SHEET # _____

HOME VISIT OUTREACH WORKSHEET

CLIENT NUMBER		OUTREACH ACTIVITIES				
		DATE	TYPE	TIME TAKEN	RESULT	ACTION TAKEN
NAME OF CLIENT						
MOTHER'S NAME						
ADDRESS						
PHONE NUMBER						
CASE NUMBER						
NAME OF CLIENT						
MOTHER'S NAME						
ADDRESS						
PHONE NUMBER						
CASE NUMBER						
NAME OF CLIENT						
MOTHER'S NAME						
ADDRESS						
PHONE NUMBER						
CASE NUMBER						
NAME OF CLIENT						
MOTHER'S NAME						
ADDRESS						
PHONE NUMBER						
CASE NUMBER						

APPENDIX L

Memo Written Concerning Organizational Interaction
Needed for Outreach

CONTRA COSTA COUNTY
HUMAN RESOURCES AGENCY

Appendix II
SOCIAL SERVICE DEPARTMENT

TO: Distribution below:

DATE: April 22, 1976

FROM: Barbara R. Weidenfeld
Health Services Program Specialist

cc:

RECEIVED
APR 27 1976
CHILD HEALTH & DISABILITY PREVENTION PROGRAM

SUBJECT: CHDP PROGRAM REFERRALS

The following is a resume of various memos, manual materials and verbal instructions about the CHDP Program (EPSDT, Medi-Screen) that have been issued during the past year. Manual material is in the process of development. In order to provide adequate social services and make referrals to a health care resource, workers should follow the procedures outlined.

1. Each referral from income maintenance means that a client has answered question 22 (formerly #27) of the WR-2 in the affirmative. This answer means that the recipient wishes more information, and perhaps, a referral to a health screening resource.

2. Each referral requires a communication between the client and worker either face-to-face or by telephone if the former is not possible.

3. An offer of a screening referral includes:

   a. An explanation of the CHDP Program for Medi-Cal recipients. This includes the purpose of the program, the importance of periodic "wellness" checkups (most Medi-Cal people get care only when they are ill), the availability of "wellness" checkups under the Medi-Cal program, the requirement that the children will need evidence of screening before entering first grade. Additional information on what the program involves is available in the new CHDP Program Brochure. Specific Division Supervisors and their designated staff have been assigned to provide information to clients about CHDP (formerly Medi-Screen).

   b. Inquiry about the client's regular source of health care. If a client has a doctor to whom she/he takes the children) when ill, refer that client back to the doctor to inquire whether "wellness" checkups are available. If the client subsequently wishes a referral to a public provider, they should call the worker back.

   c. If the client calls back or has no regular source of care. A CHDP Program referral is then made to the County Health Department or County Medical Services.

4. If the service contact results in a referral to a health care resource for screening, an MS-1, documenting that referral, must be on file.

April 22, 1976

5. If the referral is made to the County Medical Services or to the County Health Department, one copy of the MS-1 is sent there. If the referral is made to a private physician, the provider copy remains with the service record.

6. If there is no case folder (i.e., referral is being handled as an I & R), there must be a central repository in each office for copies of the ABCDM 261 and MS-1 referral forms.

7. The purpose of ABCDM 261 and the MS-1 is to leave an audit trail. The Federal and State requirements are that:

   a. Each eligible Medi-Cal recipient must be offered information for a referral to CHDP Screening (Audit Trail--WR-2 plus ABCDM 261, see Department Manual 30-400 and 30-400/2).

   b. Each person referred to service must be contacted and referred to a health screening resource if indicated. (Audit Trail--MS-1, see Department Manual 30-400 and 300-400/1.)

   c. Each person referred for screening must be scheduled for screening within 60 days of the date they requested service (date on the WR-2). Our responsibility will be discussed in forthcoming material.

   d. After screening, necessary diagnostic or treatment follow-up must take place normally within 60 days. Our responsibility will be discussed in forthcoming material.

   e. DHEW's Medical Services Administration states that the Federal Auditors will expect that there will be follow-up on broken screening appointments and that rescheduling will be offered. This is part of the outreach effort and probably will be considered a Social Service Department responsibility and will be discussed in forthcoming material.

Attached to this memo is a listing of public CHDP service providers in each district; also, a list of Social Services personnel who have received training in the program. Inquiries about referrals, etc., may be made of these persons or the Health Services Program Specialist. Inquiries about clinic schedules may be addressed to persons on the providers list.

This memorandum will be followed by departmental manual guidance, providing a uniform process.

BRW:es

Attachment

Distribution:

Carroll Boyd
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Allan DeKay
[illegible] Daly
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Gerald Stearns
Milt Vonier
Bea Goff
Maxine Schring
Anita Merrell
Dr. Jogi Khanna
Liz Rose

CHILD HEALTH & DISABILITY PREVENTION
PROGRAM PROVIDERS (PUBLIC)

Social Service District Office	Providers & Address	Contact Phone
East County (except CT's 3010, 3020, 3031, 3032, 3040)	County Medical Services Pittsburg Outpatient Clinic 45 Civic Avenue, Pittsburg County Health Department 45 Civic Avenue Pittsburg, CA	X 231 or X 224 X 211
East County (CT's 3010, 3020, 3031, 3032, 3040)	County Health Department EPSDT Project 118 Oak Street Brentwood, CA	634-1191
Central County	County Health Department 85 Cleaveland Road Pleasant Hill, CA or (For Martinez residents and all PHP members) County Medical Services Family Practice Clinic 4500 Alhambra Avenue Martinez, CA 94553	185-201 X 4376
West County	County Health Department 100-37th Street Richmond, CA or County Health Department EPSDT Project 280-8th Street Richmond, CA	X 3101 236-8280
Rodeo Center	Public Health Nurse 525-2nd Street Rodeo, CA	758-0441

BRW:mn

Contact persons and census tract described in Service Program Memo #75-4 continue to be valid.

APPENDIX M

Discriminate Functions for the Needing of Certain Screen Procedures

Discriminate Functions for the
Needing of Certain Screen Procedures

Discriminate Function

Criterion Variable of those screened who needed urine step

Number of cases 14,043 needed; 5,702 not needed

Canonical Corr. .526

Centroids +.825 for not needed; - .335 for needed
$\bar{x}^2 = 6,398$

Constant 1.473

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-.55	-.26	563
White	-.35	-.17	38
Black	-.59	-.28	47
MexAm	-.51	-.22	38
West	-1.09	-.51	1,153
East	-1.5	-.56	1,162
Other	-.22	-.08	62
Yrs old	-.09	-.43	3,091
Screen sequence	+.12	+.14	119

Discriminate Function

Criterion Variable of those screened, who needed hearing step

Number of cases 11325 not needed; 8,420 needed

Canonical Corr. .70

Centroids + .6 for not needed; -.8 for needed

x^2 = 13,274

Constant .85

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-.16	-.08	108
White	-.08	-0.04	4
Black	-.05	-0.02	2
MexAm	-.09	-0.04	2
West	-.10	-0.05	19
East	-.41	-0.15	270
Other	-.07	-.03	9
Yrs old	-.19	-.90	17,641
Screen sequence	+.10	.12	260

Discriminate Function

Criterion Variable of those screened, who needed vision step

Number of cases 10,998 did not need; 8,747 did need

Canonical Corr. 0.675

Centroids +.6 for not needing; -.75 for needing

$x^2 = 11,995$

Constant 0.74

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-.18	-.09	118
White	-	-	-
Black	-	-	-
MexAm	-0.04	-.02	6
West	-.08	-.04	12
East	-.34	-.13	151
Other	-.07	-.03	9
Yrs old	-.19	-.89	15,363
Screen sequence	+.13	+.14	340

Discriminate Function

Criterion Variable of those screened who needed Hemo step

Number of cases 6,358 not needed; 13,387 needed

Canonical Corr. .45

Centroids +.65 for not needing; -.31 for needing

x^2 = 4,471

Constant 1.41

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-.46	-.22	252
White	-.29	-.14	17
Black	-.43	-.20	14
MexAm	-.33	-.14	3
West	-.65	-.31	335
East	-.84	-.31	289
Other	-.16	-.06	19
Yrs old	-.15	-.74	3,860
Screen sequence	+.06	+.07	22

Discriminate Function

Criterion Variable of those screened, who needed Dental Step

Number of cases 7,770 not needed; 11,975 needed

Canonical Corr. .57

Centroids +.7 for not needing; -.5 for needing

$x^2 = 7,895$

Constant .97

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-.22	-.1	126
White	-	-	-
Black	-	-	-
MexAm	-.06	-.03	6
West	-.26	-.12	70
East	-.54	-.20	158
Other	-.22	-.08	56
Yrs old	-.18	-.88	9,027
Screen sequence	+.07	-.07	46

Discriminate Function

Criterion Variable of those screened who needed the PKU step

Number of cases 17,314 did not need; 2,431 needed

Canonical Corr. .34

Centroids -.12 for not needing; +.91 for needing

$x^2 = 2,460$

Constant 1.09

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-	-	-
White	+.17	+.08	3
Black	+.28	+.13	6
MexAm	+.35	+.15	11
West	+.35	+.16	87
East	+.67	+.25	100
Other	-	-	-
Yrs old	-.22	-1.06	1,929
Screen sequence	-.36	-.41	416

APPENDIX N

Discriminate Functions Showing Factors Affecting
The Receipt of Needed Screening Procedures

Discriminate Functions Showing Factors Affecting
The Receipt of Needed Screening Procedures

Discriminate Function

Criterion Variable of those who needed urine step, who received

Number of cases 10,406 received; 3,617 do not

Canonical Corr. 0.332

Centroids received + 0.563; not received -0.196

x^2 = 1,638.7

Constant +0.505

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-0.0545	-0.027	1
White	-0.1141	-0.054	2
Black	-	-	-
MexAm	-	-	-
West	-0.1318	-0.065	3
East	-0.1584	-0.066	1
Other	-0.2704	-0.093	6
Yrs old	-0.1616	-0.823	1,493
Screen sequence	+0.351	+0.358	207
Project Year	-	-	-

Discriminate Function

Criterion Variable of those who need hearing step, who received

Number of cases 7,709 receive; 694 do not

Canonical Corr. 0.196

Centroids not receive +0.652; Receive -0.059

$x^2 = 327.48$

Constant 0.991

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-	-	-
White	-	-	-
Black	-	-	-
MexAm	+0.549	+0.237	19
West	-	-	-
East	-1.108	-0.484	47
Other	-0.323	-0.111	4
Yrs old	-0.155	-0.758	247
Screen sequence	+0.338	+0.228	15
Project Year	-	-	-

Discriminate Function

Criterion Variable of those needing vision, who receives

Number of cases 7,691 received; 1,038 did not receive

Canonical Corr. .242

Centroids +.66 for not receiving; -.09 for receiving

$x^2 = 527.65$

Constant +.93

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-	-	-
White	-.15	-.07	1
Black	-	-	-
MexAm	+.34	+.15	16
West	+.51	+.25	81
East	-.57	-.24	11
Other	-.17	-.06	1
Yrs old	-.17	-.85	412
Screen sequence	+.25	+.17	15
Project Year	-	-	-

Discriminate Function

Criterion Variable of those needing PKU, who receives

Number of cases 1,631 receive; 798 did not receive

Canonical Corr. .213

Centroids +0.30 for not receiving;-0.15 for receiving

$x^2 = 112.3$

Constant -23.68

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	+.32	0.14	2
White	-1.16	-0.56	19
Black	-	-	-
MexAm	-0.45	-0.20	5
West	+1.05	0.50	57
East	-	-	-
Other	-	-	-
Yrs old	-0.22	-0.37	19
Screen sequence	+0.21	+0.19	5
Project Year	0.31	+.25	3

APPENDIX O

Discriminate Functions for Factors Affecting the Rate of Positive Findings
for each clinic completed (same day as screen)
screening procedure

Discriminate Functions for Factors Affecting the Rate of Positive Findings for each clinic completed (same day as screen) screening procedure

Discriminate Function

Criterion Variable of those recieving the Urine Step; who has a positive finding

Number of cases 171 had positive finding; 10,235 did not

Canonical Corr. .101

Centroids -0.013 for normal; +0.78 for positive finding

$x^2 = 107.7$

Constant -1.32

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-	-	-
White	-	-	-
Black	+0.64	+0.31	9
MexAm	-	-	-
West	0.96	+0.47	57
East	-0.33	-0.14	1
Other	-	-	-
Yrs old	0.12	+0.61	40
Screen sequence	-	-	-
Project Year	-	-	-

Discriminate Function

Criterion Variable of those recieving hearing step, who had positive finding

Number of cases 7,459 normal; 250 positive finding

Canonical Corr. 0.052

Centroids +0.009 for normals; -0.28 for positive finding

$x^2 = 20.82$

Constant + 1.49

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	1.11	0.55	8
White	-0.83	-0.40	2
Black	-2.38	-1.14	6
MexAm	-	-	-
West	-	-	-
East	-1.30	-0.58	4
Other	-	-	-
Yrs old	-	-	-
Screen sequence	-0.34	-0.22	1
Project Year	-	-	-

Discriminate Function

Criterion Variable of those receiving the vision step; who had a + finding

Number of cases 7,091 normals; 600 positive findings

Canonical Corr. 0.166

Centroids +0.05 for normals: -0.57 for positive findings

$x^2 = 214.9$

Constant 1.47

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	0.29	0.15	4
White	-	-	-
Black	-0.64	-0.31	13
MexAm	-	-	-
West	-1.22	-0.59	138
East	-	-	-
Other	-0.21	-0.07	1
Yrs old	-0.11	-0.54	60
Screen sequence	-	-	-
Project Year		-	-

Discriminate Function

Criterion Variable of those receiving a physical, who had a positive finding

Number of cases 9,669 normals; 9,677 with positive finding

Canonical Corr. .171

Centroids -0.17 for normals; +0.17 for positive finding

x^2 = 571

Constant -1.24

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	0.40	0.19	26
White	0.51	0.25	1
Black	0.88	0.41	14
MexAm	0.47	0.20	5
West	1.37	0.65	341
East	-	-	-
Other	-0.59	-0.22	21
Yrs old	-0.08	-0.41	119
Screen sequence	0.30	0.33	48
Project Year	-	-	-

Discriminate Function

Criterion Variable of those receiving a dental step, who had a positive finding

Number of cases 8,943 normals; 2,908 with a positive finding

Canonical Corr. .269

Centroids Normal +0.15; positive finding-0.47

$x^2 = 893$

Constant 0.60

Independent Variables	Unstandardized	Standardized	F
Medi-Cal	-0.08	-0.04	1
White	+0.50	0.24	50
Black	-	-	-
MexAm	-0.13	-0.06	1
West	-0.94	-0.45	331
East	+0.23	+0.09	6
Other	-	-	-
Yrs old	-0.12	-0.59	473
Screen sequence	+.24	0.23	44

APPENDIX P

Groupings of Problem Descriptions and
Diagnoses for use in Statistical Tables.

APPENDIX P

Groups of problem descriptions and diagnoses
for use in statistical tables

No.	General Description	ICDA Codes
01	Infective and Parasitic diseases, Tine Influenza Thrush, Ringworms, Scabies, Gastroenteritis (acute), Warts, Lice, Athlete's Foot, Diahrrea	000-003,010-027,030-033, 035-046,050-057,060-063, 071-104,110-117,120-126, 128-136,470-474,079.1
02	Pinworms	127
03	Neoplasms-Nodes, Lumps, Growths, Mass, Tumor(Benign), Nevus, Hemangioma	140-163, 170-174, 180-223, 227, 230-239
04	Diseases of Thyroid and other Endocrine glands	240-246, 251-253
05	Diabetes	250
06	Nutritional and Metabolic conditions Feeding problem, G6PD, Underweight	260-269, 270-276, 278-279
07	Obesity	277
08	Anemias and other Diseases of the blood and blood-forming organs	280-289
09	Psychoses, Neuroses, Personality and other mental disorders, Hyperactivity, Childhood Behavior Prob.	290-305, 307-309
10	Speech disorder, Learning disturbance	306
11	Mental Retardation	310-315
12	Diseases of the nervous system, Migraine	320-324, 330-333,340-344, 346-358
13	Convulsive Disorder, Clonus	345,780
14	Vision problems: Refractive errors and blindness, Astigmatism, Hyperopia Myopia, Eye Strain, Presbyopia, Exam	370,379
15	Eye problem, diseases, Strabismus, Conjunctivitis, Esotropia, Exophoria	360-369, 371-378

16	Hearing Test, Otitis Media and other Ear Problems.	380-387
17	Hearing Loss	388,389
18	Rheumatic Fever and rheumatic heart disease	390-398
19	Other heart and circulatory conditions, Heart murmur, High BP, Hypertension	400-404, 410-414, 420-438 440-448, 450-458
20	Upper Respiratory Tract diseases, Rhinitis, Tonsillitis, Chronic sinusitis	034,460-466, 500-506 508
21	Lower Respiratory Tract diseases, Bronchitis	480-486, 490-492, 510-519
22	Allergies, Hay Fever, Asthma Allergic-Contact Dermatitis	507, 493,692
23	Dental Caries	521
24	Other dental and oral problems, Dental evaluation, Gingivitis, Maloclussion	520, 522-529
25	Upper G.I. Tract	530-537
26	Lower G.I. Tract and Intestinal Problems	560-564
27	Lower G.I. Tracts, Appendicitis, Hepatitis	070, 540-543, 565-577
28	Hernias	550-553
29	Genitourinary conditions, Phimosis Tight foreskin, Hydrocele	580-584, 590-607
30	Menstrual and reproductive conditions; Abortion	610-616, 620-629, 640-645
31	Pregnancy, Delivery and Puerperium	630-639, 650-662-670-678
32	Dermatological problems, Impetigo, Diaper Rash, Ingrown toenail, Keloid,Infantile Eczema, Acne, Erythema, Atopic Dermatis, Cradle Cap	680-686; 690-691; 693-698 700-709

33	Orthopedic problems: Scoliosis Osgood-schlatter	710-718; 720-738
34	Congenital anomalies: Ichthyosis Undescended Testicle, Hypospadias Flat feet, Toes-In	740-759
35	Certain causes of perinatal morbidity and mortality, Failure to thrive	760-779
36	Symptoms and ill-defined diseases, Epistaxis, Cough, Vomiting, Fever, Headaches, Rales, Albuminuria, Proteinuria, Ketouria	781-785; 787-796
37	Enuresis - Dysuria, Polyuria	786
38	Injuries; Foreign Body--Ear; Blood Level (Plumbism)	800-848; 850-854; 860-887 890-897; 900-907; 910-918 920-999
40	Other - Developmental Abn. Growth, Abn. ht. and wt.	
77	No Problem	
55	Unimmunized	
88	No Information	
50	Denver	

APPENDIX Q

Detailed Tables of Rates of Problems found and Diagnosed per 1,000 Children Screened, Severity of Conditions, Newness of Conditions and False Positives by Problem Categories and by Age Group

Referral Outcomes for All Years in East and West Co.

U.S. Number, Original Screens (512 Screened)

All Years

	(1) No. Referred	(2) Rate/1000 Screens [(1)÷512]x1000	(3) No. Diagnosed	(4) Rate/1000 Screens [(3)÷512]x1000	(5) No. Rated Mod. Severe	(6) % of Diagnosed (5) ÷ (3)	(7) No. Under Care	(8) % of Diagnosed (7) ÷ (3)	(9) No. Successful Resolution (9÷1)	(10)	(11) No. False Positive (11÷1)	(12) %
Inductive % Paralytic, Including Hearing	6	11.72	5	9.77	0		0		4	66.7%	1	16.7%
Fracture	0											
Speech Disorder	0											
Thermal or Electrical Burns	1	1.95							0		0	0
Diabetes												
Hepatitis (Viral or Unk. Etiology)	1	1.95										
Rickettsia	0								1	100%	1	100%
Anemia	8	15.63	5	9.77	3	60%	0	0	7	87.5%	1	12.5%
Psychosis	0		1	1.95	1	100%	0	0				
Speech Disorder	0											
Mental Retardation												
Surgery by Dr.	0											
Convulsive	1	1.95	1	1.95	1	100%	0	0	1	100%	0	0
Vision	0					0						
Eye	4	7.81	2	3.91	0		0	0	3	75%	0	0
Ear	2	3.91	2	3.91	0	0	1	50%	2	100%	0	0
Hearing Loss	0											
Orthopedic Defect	0											
Heart Murmur/Congenital Defect	1	1.95										
??	6	11.72	5	9.77	1	20%	0	0	4	66.7%	0	0
???	0		1	1.95	1	100%	1	100%	0	0	0	0
Allergies	1	1.95	1	1.95	0	0	0	0	1	100%	0	0
Caries	1	1.95	1	1.95	1	100%	0	0	0	0	0	0
Dental Other,	3	5.86							2	66.7%	0	0
Gum Oil	0											
Bowel Oil & Intestinal	0											
Bowel Oil/Appendix	1	1.95	1	1.95	0	0	0	0	1	100%	0	0
Hernia	1	1.95	1	1.95	0	0	0	0	1	100%	0	0
Genitourinary	1	1.95	1	1.95	1	100%	1	100%	1	100%	0	0
Menstrual	0											
Pregnancy	0		1	1.95	0	0	0	0				
Seizure/Epilepsy	10	19.53	8	15.63	3	37.5%	0	0	9	90%	0	0
Orthopedic	1	1.95	1	1.95	0	0	0	0	1	100%	0	0
Congenital	2	3.91	2	3.91	2	100%	0	0	2	100%	0	0
FTT - Failure to Thrive	4	7.81	1	1.95	0	0	0	0	4	100%	0	0
MR-Undefined	3	5.86	1	1.95	0	0	0	0	2	66.7%	0	0
Enuresis	0											
Injury/Foreign body/Lead	0											
Other developmental-MR/DD												
Denver	1	1.95							0		0	
TOTAL	59	115.21	41	89.84	14		3		46		3	

Referral Outcomes [redacted] 1 Years in East and West Co.

4-11 Months, Original Screens (466 Children)

	(1) No. Referred	(2) Rate/1000 Screens [(1)÷512]x1000	(3) No. Diagnosed	(4) Rate/1000 Screens [(3)÷512]x1000	(5) No. Rated Mod.-Severe	(6) % of Diagnosed (5) ÷ (3)	(7) No. Under Care	(8) % of Diagnosed (7) ÷ (3)	(9) No. Successful Resolution (9+1)	(10) %	(11) No. False Positive (11+1)	(12) %
Info Live + Parasitic, including diarrhea	5	10.73	6	12.88	4	66.7%	2	33.3%	5	100%	0	0
Pneumonia	0											
Scabies	0											
Thyroid & Endocrine	1	2.15										
Diabetes									0	0	0	0
Nutritional & Metabolic/ FTT	4	8.58	2	4.29	0	0	0	0	4	100	0	0
Obesity	0											
Anemia	39	83.69	22	47.21	3	13.6	1	4.6	18	46.3	0	0
Fe Deficiency	0											
Sickle Cell Disorder	0											
Mental Retardation												
Nervous System	0											
Convulsive	0											
Vision	0											
Eye	3	6.44	2	4.29	1	50	0	0	2	66.7	0	0
Ear	6	12.88	4	8.58	3	75	0	0	5	83.3	0	0
Hearing Loss	0											
Recurrent Fever	0											
Heart Murmur/Hyper-tension	4	8.58	2	4.29	0	0	0	0	2	50	1	25
UPI	5	10.73	3	6.44	1	33.3	0	0	4	80	0	0
LPI	1	2.15	2	4.29	2	100	0	0	1	100	0	0
Adenitis	2	4.29	3	6.44	0	0	0	0	2	100	0	0
Croup	0											
Dental-Other	1	2.15	1	2.15	0	0	0	0	1	100	1	100
Upper GI	0											
Lower GI & Intes. Inf	1	2.15										
Lower GI/Appendix	1	2.15										
Hernia	0											
Genitourinary	4	8.58	2	4.29	1	50	0	0	1	25	1	25
Undescend	0											
Pregnancy	0											
Gynecologic	8	17.17	5	10.73	2	40	0	0	6	75	0	0
Orthopedic	4	8.58	2	4.29	2	100%	0	0	1	25%	1	25%
Congenital	3	6.44	1	2.15	1	100	0	0	3	100	0	0
FIT - Failure to thrive	0											
Ill-defined	5	10.73	1	2.15	0	0	0	0	2	40	0	0
Enuresis	0											
Injury/foreign body/lead	1	2.15	1	2.15	0	0	0	0	1	100	0	0
Other developmnt-Ht/Wt												
Denver	3	6.44	2	4.29	1	50	0	0	1	33.3	1	33.3
False Positive	1	2.15							1	100	0	0
Unable to read, but have a return.			5	10.73	5	100	0	0				
TOTAL					26		3		60		5	

Referral Outcomes for All Years in East and West Co.

1 Yr. of Age, Original Screen (507 Children)

	(1) No. Referred	(2) Rate/1000 Screened [(1)÷512]x1000	(3) No. Progressed	(4) Rate/1000 Screened [(3)÷512]x1000	(5) No. Rated Mod. Severe	(6) % of Progressed (5) ÷ (3)	(7) No. Under Care	(8) % of Dismissed (7) ÷ (3)	(9) No. Successful Resolution (9#)	(10) %	(11) No. False Positive (11#)	(12) %
Info Lost - Can't Ident. as Referral diarrhea	7	13.81	7	13.81	2	28.6%	0	0%	6	85.7%	0	0%
Pneumonia	0											
Bronchitis	1	1.97							1	100	0	0
Diarrhea, Undetermined Infectious	4	7.89	1	1.97	0	0	0		1	2.5	0	0
Gastrointestinal - Metabolic/ Other	1	1.97							0	0		
Measles	1	1.97							0	0		
Anemia	75	147.93	51	100.59	9	17.7	0	0	27	36	1	1.33
Pertussis	2	3.94							2	100	0	0
Specific Disorder	1	1.97	1	1.97	0	0	0	0	0	0		
Dental Deterioration												
Dental Caries	0		1	1.97	1	100	0	0				
Failed Vac	0											
Strabismus	2	3.94										
Ear	5	9.86	4	7.89	2	50	2	50	5	100	0	0
Eye	22	43.39	18	35.50	8	44.4	2	11.1	19	86.4	0	0
Hearing Loss	0		1		0		9					
Pregnancy Loss	0											
Head Injury/Epilepsy/ Seizure	2	3.94	1	1.97	0	0	0	0	1	50	0	0
URI	12	23.67	12	23.67	5	41.7	0	0	9	75	0	0
LRI	2	3.94	2	3.94	1	50	0	0	2	100	0	0
Allergies	0		2	3.94	2	100	0	0				0
Caries	6	11.83	2	3.94	0	0	0	0	2	33.3	0	0
Dental-Other	3	5.92	1	1.97	0	0	0	0	1	33.3	0	0
Upper GI	0											
Lower GI & Info Lost	1	1.97	1	1.97	1	100	0	0	1	100	0	0
Cough/Bronchitis	0											
Hernia	1	1.97	1	1.97	0	0	0	0	1	100	0	0
Genitourinary	3	5.92	3	5.92	1	33.3	0	0	3	100	0	0
Postnatal	1	1.97	1	1.97	1	100	1	100	1	100	0	0
Pregnancy	0											
Other	10	19.72	8	15.78	5	62.5	1	12.5	9	90	1	10
Orthopedic	11	21.70	5	9.86	0	0%	1	20%	6	54.6%	1	9.1%
Congenital	0											
Ill-Failure to Thrive	0								0			
Ill-defined	2	3.94							2	100	0	0
Cancer	0											
Burns/Foreign Body/Lead	3	5.92	3	5.92	1	33.3	0		3	100	0	0
Other developmental/ Behavior	1	1.97							0	0		
Deaf	0											
False Positive Unable to read, but have a return.	180		4	7.89	0	0	0					
TOTAL			134		40		17		105		3	

Referral Outcomes for All Years in East and West Co.

	(1)	(2)	2-4 Yr., Original Screens (1579 screens) (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	No. Referred	Rate/1000 Screens	No. Diagnosed	Rate/1000 Screens	No. Rated Mod.-Severe	% of Diagnosed (5) ÷ (3)	No. Under Care	% of Diagnosed (7) ÷ (3)	No. Successful Resolution (9+1)		No. False Positive (11+1)	
Infective & Parasitic, including diarrhea	18	11.40	13	8.23	3	23.1%	0	0%	13	72.2%	0	0%
Allergies	2	1.27	1	0.63	0	0	0	0	1	50	0	0
Metabol.	4	2.53							2	50	1	25
Thyroid & Endocrine	0		0						2		1	
Blood												
Nutritional/Metabolic/ GI/GU	5	3.17	2	1.27	0	0	0	0	3	60	0	0
Obesity	0											
Asthma	78	49.40	53	33.57	6	11.3	0	0	51	65.4	2	2.6
Psychosoc.	1	0.63							0	0		
Speech/Hear. Def.	11	6.97	5	3.17	1	20	0	0	4	36.4	0	0
Dental Retardation			1	0.63	0	0	0	0				
Nervous System	0											
Sensitive	0											
Vision	15	9.50	3	1.90	1	33.3	0	0	7	47.7	2	13.3
CNS	18	11.40	7	4.43	3	42.9	0	0	9	50	2	11.1
Ear	33	20.90	26	16.47	15	57.7	0	0	24	72.7	0	0
Hearing Loss	1	0.63							1	100	0	0
Systemic Fever	1	0.63							1	100	0	0
Heart Murmur/Hyper-tension	20	12.67	10	6.33	0	0	0	0	11	55	1	5
CHD	22	13.93	21	13.30	16	76.2	0	0	20	90.9	0	0
PHD	2	1.27	1	0.63	1	100.0	0	0	2	100	0	0
TOF	2	1.27	8	5.07	6	75	2	25	2	100	0	0
Allergies	2	1.27	91	57.63	61	67	3	3.3	69	36.7	2	1.1
Caries	188	119.06	9	5.70	3	33.3	0	0	23	32.9	1	1.4
Dental-Other	70	44.33										
Upper GI	0								2	100	1	50
Lower GI & Intestinal	2	1.27							0	0	0	
Lower GI/Appendix	1	0.63							9		0	0
Hernia	5	3.17	3	1.90	1	33.3	0	0	9	45	0	0
Genitourinary	20	12.67	10	6.33	8	80	0	0	2	100	0	0
Structural	2	1.27	2	1.27	0	0	0	0				
Pregnancy	0											
Unusual	28	17.73	16	10.13	9	56.3	3	18.8	18	64.3	0	0
Orthopedic	33	20.90	18	11.40	10	55.6%	3	16.7%	17	51.5%	1	30.3%
Congenital	4	2.53	2	1.27	0	0	0	0	1	25	1	25
FTT-failure to thrive	0		1	0.63	1	100	0	0	0	0		
Ill-defined	14	8.87	1	0.63	0	0	0	0	10	71.4	3	21.4
Enuresis	0											
Injury/Foreign body/Lead	10	6.33	8	5.07	4	50	1	12.5	8	80	1	10
Other & Judgment Diff.	4	2.53	1	0.63	1	100	0	0	0	0		
Severe	3	1.90	2	1.27	2		0	0	2	66.7	0	0
False Positive			22	13.93	0	0	0	0				
Unable to read, but have a return.			3	1.90	0			33.3				
TOTAL			22		0		0					
			384		154		12		325		20	

Referral Outcomes for All Years in East and West Co.

5-12 Yr. Old, Original Screens (2187 Children)

	1	2	3	4	5	6	7	8	9	10	11	12
	No. Referred	Rate/1000 Screens	No. Diagnosed	Rate/1000 Screens	No. Rated Mod. Severe	% of Diagnosed (5÷3)	No. Under Care	% of Diagnosed (7÷3)	No. Successful Resolution	% (9÷1)	No. False Positive	% (11÷1)
Infective & Parasitic, including diarrhea	28	12.80	28	12.80	16	57.1%	1	3.6%	21	75%	1	3.6%
Tumors	0											
Anemia	8	3.66	2	0.91	0	0	1	50	5	62.5	0	0
Thyroid & Endocrine	2	0.91							2	100	0	0
Skeletal												
Nutritional & Metabolic/ Gastrointestinal	6	2.74	5	2.29	1	20	0	0	3	50	0	0
Obesity	4	1.83	4	1.83	3	75	0	0	3	75	0	0
Anemia	53	24.23	24	10.97	1	4.2	0	0	26	49.1	3	5.7
Psychosis	15	6.86	10	4.57	3	33.3	1	10	8	53.3	0	0
Speech Disorder	2	0.91	2	0.91	0	0	0	0	1	50	0	0
Mental Retardation												
Nervous System	1	0.46	1	0.46	0	0	1	100	0	0		
Convulsive	3	1.37	3	1.37	1	33.3	0	0	3	100	0	
Vision	87	39.78	31	14.17	16	51.6	2	6.5	48	55.2	7	8.1
Eye	26	11.89	17	7.77	11	64.7	2	11.8	16	61.5	3	11.5
Ear	38	17.38	35	16.00	19	54.3	1	2.9	34	89.5	0	0
Hearing Loss	10	4.57	5	2.29	2	40	1	20	7	70	0	
Rheumatic Fever	2		1	0.45	1	100.0	0	0	26		7	
Heart Murmur/Hyperdynamics	21	9.60	7	3.20	1	14.3	0	0	26		7	33.3
PDA	24	10.97	16	7.32	9	56.3	1	6.3	16	66.7	1	4.2
VSD	2	0.91	2	0.91	1	50	0	0	0	0		
Allergies	5	2.29	14	6.40	8	57.2	3	21.4	3	60	0	0
Caries	534	244.17	251	114.77	160	63.8	23	9.2	225	42.1	4	0.8
Dental-Other	114	52.13	42	19.20	22	52.4	3	7.1	56	49.1	2	1.8
Upper GI	1	0.46							0	0		
Lower GI & Intestinal	1	0.46	1	0.46	1	100	1	100	1	100	0	0
Lower GI, Appendix	1	0.46	1	0.46	1	100	0	0	0	0		
Hernia	5	2.29	2	0.91	2	100	0	0	3	60	1	20
Genitourinary	15	6.86	10	4.57	6	40	0	0	3	20	1	6.7
Acetonuria	4	1.83	1	0.46	1	100			3	75	1	25
Precocity	0											
Behavior	36	16.46	19	8.69	8	42.1	1	5.3	30	83.3	1	2.8
Orthopedic	29	13.26	15	6.86	6	40	4	26.7	17	58.6	3	10.3
Congenital	8	3.66	8	3.66	4	22.2	1	12.5	7	87.5	0	0
III-Failure to Thrive	0								0	0		
III-defined	47	21.49	13	5.94	5	38.5	0	0	29	61.7	3	6.4
Enuresis	8	3.66	1	0.46	1	100	0	0	2	25	0	0
Injury/foreign body/lead	17	7.77	9	4.12	4	44.4	0	0	11	64.7	0	0
Other development-Nt/Nt	8	3.66	4	1.83	1	25	0	0	5		2	25
Denver	2	0.91							0	62.5		
			56	25.61	0	0	2	3.6				
			8	3.66	1	12.5	0	0				
	1,167		648		316		49		640		47	

Referral Outcomes for All Years in East and West Co.

13-21 Yrs. of Age, Original Screens (1207 Children)

	No. Referred	Rate/1000 Screens	No. Diagnosed	Rate/1000 Screens	No. Rated Mod. Severe	% of Diagnosed	No. Under Care	% of Diagnosed	No. Successful Resolution	%	No. False Positive	%
Infective & Parasitic, including diarrhea	9	7.46	15	12.43	9	60%	0	0%	6	66%	0	0%
Diseases	0											
Neoplasms	6	4.97	3	2.49	1	33.3	0	0	4	66.7	0	8
Thyroid & Endocrine Diabetes	0		1	0.83	0	0	0	0				
Nutritional & Metabolic/ Food	5	4.14	2	1.66	0	0	0	0	3	60	0	0
Obesity	5	4.14	6	4.97	4	66.7	0	0	4	80	0	0
Anemia	34	28.17	19	15.74	1	5.3	0	0	16	47.1	3	8.8
Psychoses	6	4.97	3	2.49	3	100	0	0	1	16.7	0	0
Speech Disorder	0											
Mental Retardation												
Nervous System	2	1.66	2	1.66	0	0	0	0	1	50	0	0
Convulsive	1	0.83	1	0.83	0	0	0	0	0	0		
Vision	55	45.57	22	18.23	10	45.5	1	4.6	30	54.6	3	5.5
Eye	11	9.11	8	6.63	5	62.5	1	12.5	7	63.6	0	0
Ear	10	8.29	2	1.66	0	0	0	0	5	50	3	33.3
Hearing Loss	3	2.49	1	0.83	9	100	9	100	2	66.7	0	0
Rheumatic Fever	0											
Heart Murmur/Hyper-tension	14	11.60	4	3.31	1	25	0	0	5	35.7	1	7.1
MPI	8	6.63	2	1.66	2	100	0	0	4	50	0	0
LPI	2	1.66	3	2.49	0	0	1	33.3	2	100	0	0
Allergies	4	3.31	5	4.14	3	60	0	0	3	75	0	0
Caries	213	176.47	127	105.22	90	70.9	3	2.4	90	42.3	0	0
Dental-Other	86	71.25	16	13.26	3	18.8	1	6.3	34	39.5	0	0
Upper GI	2	1.66			0	0	0	0	2	100	0	0
Lower GI & Intestinal	1	0.83							1	100	0	0
Lower GI/Appendix	1	0.83	2	1.66	1	50	0	0	1	100	0	0
Hernia	3	2.49							1	33.3	1	33.3
Genitourinary	7	5.80	5	4.14	3	60	1	20	4	57.1	0	0
Menstrual	25	20.71	14	11.60	7	50	2	14.3	14	56	0	0
Pregnancy	1	0.83	1	0.83	0	0	0	0	1	100	0	0
Dermatologic	27	22.37	15	12.43	9	60	1	6.7	20	74.1	0	0
Orthopedic	16	13.26	11	9.11	2	18.2	0	0	10	62.5	0	0
Congenital	8	6.63	5	4.14	3	60	0	0	4	50	0	0
F11 - Failure to Thrive	0								0	0		
111-defined	30	24.86	8	6.63	1	12.5	0	0	16	53.3	2	66.7
Enuresis	5	4.14	1	0.83	1	100	1	20	3	60	1	20
Injury/foreign body/lead	7	5.80	4	3.31	3	75	0	0	4	57.1	0	0
Other development-ltt/lit	5	4.14							3	60	0	0
Denver			17	14.08	9		2					
			3	2.49	0		0					
	612		331		175		15		301		14	

APPENDIX R

Detailed Tables of the Resolution Status
of the Most Frequent Conditions
Referred

Detailed Tables of the resolution status of the most frequent conditions referred.

Dental Caries - All Ages:

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	894	59	293	330	1576
Number with known resolutions	774	52	278	229	1333
Percent with known resolutions	86.6%	88.1%	94.9%	69.4%	84.6%
Resolution Status (% of known)					
Saw Dentist	47.4%	80.8%	40.3%	64.2%	50.1%
Treated-Resolved	38.1%	63.5%	32.0%	45.9%	39.2%
Still under treatment	7.6%	13.5%	5.8%	14.0%	8.6%
Treatment not Warranted	0.8%	0%	1.4%	0.9%	0.9%
Not a Problem	0.9%	3.8%	1.1%	3.5%	1.5%
Did not see Dentist	52.6%	19.2%	59.7%	35.8%	49.9%
Not Treated - Unavailable	0.5%	1.9%	0.7%	0.4%	0.6%
Not Treated - Uncooperative, moved	52.1%	17.3%	59.0%	35.4%	49.3%

Percentage of Problems by Resolution Status

Vision

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	152	12	35	59	258
Number with known resolutions	138	11	32	48	229
Percent with known resolutions	90.8%	91.7%	91.4%	81.4%	88.8%
Resolution Status (% of known)					
Saw Doctor	65.9%	54.5%	56.2%	70.8%	65.1%
Treated-Resolved	41.3%	45.5%	37.5%	43.7%	41.5%
Still under treatment	2.9%	0%	3.1%	16.7%	5.7%
Treatment not Warranted	10.1%	9.1%	9.4%	4.2%	8.7%
Not a Problem	11.6%	0%	6.2%	6.2%	9.2%
Did not see Doctor	34.1%	45.4%	43.8%	29.2%	34.9%
Not Treated - Unavailable	0%	0%	0%	2.1%	0.4%
Not Treated - Uncooperative, moved	34.1%	45.4%	43.8%	27.1%	34.5%

Percentage of Problems by Resolution Status

Anemia

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	417	67	164	520	1168
Number with known resolutions	283	55	150	420	908
Percent with known resolutions	67.9%	82.1%	91.5%	80.8%	77.7%
Resolution Status (% of known)					
Saw Doctor	83.4%	80%	76.7%	84.3%	82.5%
Treated-Resolved	32.9%	52.7%	34.7%	36.7%	36.1%
Still under treatment	44.2%	21.8%	28.7%	41.7%	39.1%
Treatment not Warranted	2.1%	1.8%	10.0%	1.2%	3.0%
Not a Problem	4.2%	3.6%	3.3%	4.8%	4.3%
Did not see Doctor	16.6%	20.0%	23.3%	15.7%	17.5%
Not Treated - Unavailable	0%	0%	0%	0%	0%
Not Treated - Uncooperative, moved	16.6%	20.0%	23.3%	15.7%	17.5%

Percentage of Problems by Resolution Status

Other Dental Problems

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	315	20	34	134	503
Number with known resolutions	274	17	30	89	410
Percent with known resolutions	87.0%	85%	88.2%	66.4%	81.5%
Resolution Status (% of known)					
Saw Dentist	47.8%	58.8%	36.7%	66.3%	51.5%
Treated-Resolved	38.3%	17.6%	26.7%	47.2%	38.5%
Still under treatment	6.2%	29.4%	6.7%	15.7%	9.3%
Treatment not Warranted	1.8%	5.9%	0%	0%	1.5%
Not a Problem	1.5%	5.9%	3.3%	3.4%	2.2%
Did not see Dentist	52.2%	41.2%	63.3%	33.7%	48.5%
Not Treated - Unavailable	0.7%	17.6%	3.3%	3.4%	2.2%
Not Treated - Uncooperative, moved	51.5%	23.5%	60.0%	30.3%	46.3%

Percentage of Problems by Resolution Status

Ear Problems

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	102	17	62	74	255
Number with known resolutions	93	15	61	64	233
Percent with known resolutions	91.2%	88.2%	98.4%	86.5%	91.4%
Resolution Status (% of known)					
Saw Doctor	90.3%	93.3%	91.8%	85.9%	89.7%
Treated-Resolved	75.3%	66.7%	85.2%	53.1%	71.2%
Still under treatment	8.6%	13.3%	4.9%	23.4%	12.0%
Treatment not Warranted	3.2%	6.7%	0%	4.7%	3.0%
Not a Problem	3.2%	6.7%	1.6%	4.7%	3.4%
Did not see Doctor	9.7%	6.7%	8.2%	14.1%	10.3%
Not Treated - Unavailable	0%	0%	0%	0%	0%
Not Treated - Uncooperative, moved	9.7%	6.7%	8.2%	14.1%	10.3%

Percentage of Problems by Resolution Status

Dermatological

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	143	9	32	85	269
Number with known resolutions	130	9	31	70	240
Percent with known resolutions	90.9%	100%	96.9%	82.4%	89.2%
Resolution Status (% of known)					
Saw Doctor	90.8%	77.8%	87.1%	88.6%	89.2%
Treated-Resolved	76.2%	55.6%	67.7%	72.9%	73.3%
Still under treatment	12.3%	11.1%	9.7%	11.4%	11.7%
Treatment not Warranted	1.5%	11.1%	6.5%	1.4%	2.5%
Not a Problem	0.8%	0%	3.2%	2.9%	1.7%
Did not see Doctor	9.2%	22.2%	12.9%	11.4%	10.8%
Not Treated - Unavailable	0%	0%	0%	0%	0%
Not Treated - Uncooperative, moved	9.2%	22.2%	12.9%	11.4%	10.8%

Percentage of Problems by Resolution Status

Orthopedic

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	96	18	26	74	214
Number with known resolutions	83	15	25	58	181
Percent with known resolutions	86.5%	83.3%	96.2%	78.4%	84.6%
Resolution Status (% of known)					
Saw Doctor	62.7%	80.9%	68.0%	81.0%	70.7%
Treated-Resolved	20.5%	40.0%	16.0%	13.8%	19.3%
Still under treatment	20.5%	6.7%	28.0%	29.3%	23.2%
Treatment not Warranted	10.8%	13.3%	20.0%	15.5%	13.8%
Not a Problem	10.8%	20.0%	4.0%	22.4%	14.4%
Did not see Doctor	37.3%	20.0%	32.0%	19.0%	29.3%
Not Treated - Unavailable	0%	6.7%	0%	1.7%	1.1%
Not Treated - Uncooperative, moved	37.3%	13.3%	32.0%	17.2%	28.2%

Percentage of Problems by Resolution Status

Dental Caries - Medi-Cal Eligible

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	470	48	67	193	778
Number with known resolutions	415	42	62	148	667
Percent with known resolutions	88.3%	87.5%	92.5%	76.7%	85.7%
Resolution Status (% of known)					
Saw Dentist	55.2%	85.7%	54.8%	65.5%	59.4%
Treated-Resolved	45.1%	71.4%	41.9%	48.6%	47.2%
Still under treatment	8.7%	14.3%	11.3%	12.8%	10.2%
Treatment not Warranted	0.7%	0%	1.6%	0%	0.6%
Not a Problem	0.7%	0%	0%	4.1%	1.3%
Did not see Dentist	44.8%	14.3%	45.2%	34.5%	40.6%
Not Treated - Unavailable	0.5%	0%	0%	0%	0.3%
Not Treated - Uncooperative, moved	44.3%	14.3%	45.2%	34.5%	40.3%

Percentage of Problems by Resolution Status

Dental Caries NonMedi-Cal Eligible

	West-Target	Central-Target	East-Target	Other	Total
Number of Problems	424	11	226	137	798
Number with known resolutions	359	10	216	81	666
Percent with known resolutions	84.7%	90.9%	95.6%	59.1%	83.5%
Resolution Status (% of known)					
Saw Dentist	38.4%	60.0%	36.1%	61.7%	40.8%
Treated-Resolved	30.1%	30.0%	29.2%	40.7%	31.1%
Still under treatment	6.4%	10.0%	4.2%	16.0%	6.9%
Treatment not Warranted	0.8%	0%	1.4%	2.5%	1.2%
Not a Problem	1.1%	20.0%	1.4%	2.5%	1.7%
Did not see Dentist	61.6%	40.0%	63.9%	38.3%	59.2%
Not Treated - Unavailable	0.6%	10.0%	0.9%	1.2%	0.9%
Not Treated - Uncooperative, moved	61.0%	30.0%	63.0%	37.0%	58.3%

APPENDIX S

Results of the Contra Costa Health Department EPSDT Project

RESULTS OF THE CONTRA COSTA HEALTH DEPARTMENT EPSDT PROJECT

In target census tracts surrounding Brentwood-Oakley and Ricmond, California, 6,000 Medicaid and non-Medicaid (but low income) children were given original screens, and 3,000 children were given periodic screens between April 1974 and July, 1976. In total, 17.5% were between 0 and 3 months; 10.5% between 4 and 11 months; 31.5% between 12 and 23 months; 13% between 2 years and 4 months; 10% between 5 years and 12 years and 11 months; and 19% between ages 13 and 21. There were 7,631 positive findings (but not all were referred due to retesting, known lack of finances, or on-site treatment). There were 3,502 problems referred and 1,853 problems treated at an estimated incremental cost of $12 per child screened.

Seventy-two percent were given the physical exam by a nurse practitioner under doctor's supervision, the rest were given physicals by the M.D. Usually there are 2-3 nurse practitioners in each clinic, and one pediatrician. Good use of health manpower resulted since nearly half of the vision and hearing problems that were found in the screening were never referred due to a "retest before referring" policy, and others were not referred due to the minor nature of the problem or the availability of some on-site treatment. The discussion here refers to those referred.

The minimum number of conditions treated or "still under treatment" (but were brought under treatment by the project) are described below with respect to the frequency of low-income children brought under treatment.

554 - Dental caries brought under treatment.

324 - Anemias brought under treatment or counseling - conditions included nutritional anemia, iron deficiency and sickle cell trait.

129 - Ear problems brought under treatment or counseling - conditions included primarily otitis media and included retracted tympanic membrane, myringitis, foreign object in the ear, extra auric appendance, and some cases of impacted cerumen.

107 - Infective brought under treatment or counseling - conditions included scabies, lice, nits, warts, ringworm, mycotic infection, thrush, parasites.

106 - Dermatological brought under treatment or counseling - conditions included impetigo, contact dermatitis, exzema, seborrhea, acne, infected toenail, ulcer of the finger, pustular rash.

95 - Upper respiratory problems brought under treatment or counseling - conditions included tonsillitis, chronic adenoiditis, URI, strep throat, allergic rhinitis, bronchitis.

76 - Other dental problems (not straightforward caries) brought under treatment or counseling - conditions included oral occlusion, overbite, gingivitis, cross-bite, prophylaxis due to extremely dirty teeth, gum boil, abcessed teeth, broken tooth.

66 - Vision problems brought under treatment or counseling - conditions included myopia, astigmatism, hyperopia, anisometropia.

66 - Eye (not refractive error) problems brought under treatment or conseling - conditions included amblyopia, esotropia, residual blepharitis, eye cyst, ptosis, strabismis, cataracts, chalozian.

55 - Orthopedic problems brought under treatment or counseling - conditions included tibial torsion, osteochondritis, genu valgum, pes planus, wobbly gait, Osgood Schlattors disease, Legg-Perthes disease, lordosis.

51 - Allergy problems brought under treatment or counseling - conditions included hayfever, epistaxis, allergy, allergic rhinitis, asthma, milk allergy, contact dermatitis.

38 - Ill-defined (diagnostic coding wise) problems brought under treatment or counseling - conditions included chest rales, abdominal tenderness, proteinuria, abscessed left toe, 2+ urine, scalp infection, feeding problem, cephalohematoma, arthralgias.

31 - Injuries and foreign bodies in ear problems brought under treatment or counseling - conditions include foreign body in ear, (stones, beans, bird seed) child abuse, burns, mal union left fore-finger, water burns, stitch abscess, splinter in abdomen.

31 - Genitourinary problems brought under treatment or counseling - conditions include urinary infection, nephritis, phimosis, para muscle spasm, urethral anostomosis, cystitis vaginitis, trichomoniasis, infected bladder, hydrocele, ureatal stenosis, undescended testicle.

27 - Heart conditions (not innocent or functional) problems brought under treatment or counseling - conditions included systolic heart murmur, pulmonic stenosis, sinus erythema, ventricular septal defect, high blood pressure.

20 - Congenital conditkon problems brought under treatment or counseling - conditions include ichthyosis, metatarsus varus, undescended testicles, hypospadias, webbed feet, polydactic left toe, clubfoot, tongue-tied.

15 - Menstrual/reproductive problems brought under treatment or counseling - conditions include irregular menses, vaginitis, dysmenarhea, cervicitis, mass in breast.

14 - Lower respiratory problems brought under treatment or counseling - conditions include bronchitis, bronchiolitis, asthmatic bronchitis, chest rhonchi.

13 - Psycho/or neurological problems brought under treatment or counseling conditions include emotional problems, inconsistent behavior, hyperactive, extreme shyness.

13 - Problems that we were unable to classify according to the description given.

12 - Obesity problems brought under treatment or counseling - conditions included at least half were moderately to severely obese.

11 - Nutritional problems brought under treatment or counseling - conditions included minimal or absent G6PD.

10 - "Other" problems brought under treatment or counseling - conditions included small stature, healed lacerations, needs help in child care.

8 - Hernias brought under treatment or counseling - conditions included inguinal hernia, hydrocele hernia, umbilical hernia.

7 - Speech problems brought under treatment or counseling - conditions included speech difficulty, articulation, slurring, slow speech development.

7 - Tumors brought under treatment or counseling - conditions included brain stem tumor in remission, polyp in throat, lump on the neck, Bartholin cyst, breast fibroids.

6 - Nervous system problems brought under treatment or counseling - conditions included moderate cerebral palsy, borderline hydrocephalus, migraine headaches, muscular dystrophy (moderate).

6 - Convulsive disorder problems brought under treatment or counseling - conditions included epilepsy, seizure disorder.

5 - Obvious developmental lag problems brought under treatment or counseling - conditions included delayed motor development and other developmental lags.

3 - Enuresis (bed-wetting) problems brought under treatment or counseling.

3 - Thyroid condition problems brought under treatment or counseling.

2 - Perinatal problems brought under treatment or counseling - conditions included cephalonematoma.
2 - Hearing problems (hearing loss) brought under treatment or counseling.
2 - Lower GI (intestinal) problems brought under treatment or counseling - conditions include constipation.
2 - Lower GI problems brought under treatment or counseling - conditions include bowel problem, rectal abscess.
1 - Pinworms brought under treatment or counseling.
1 - Rheumatic heart problem brought under treatment or counseling - conditions include mitral stenosis.

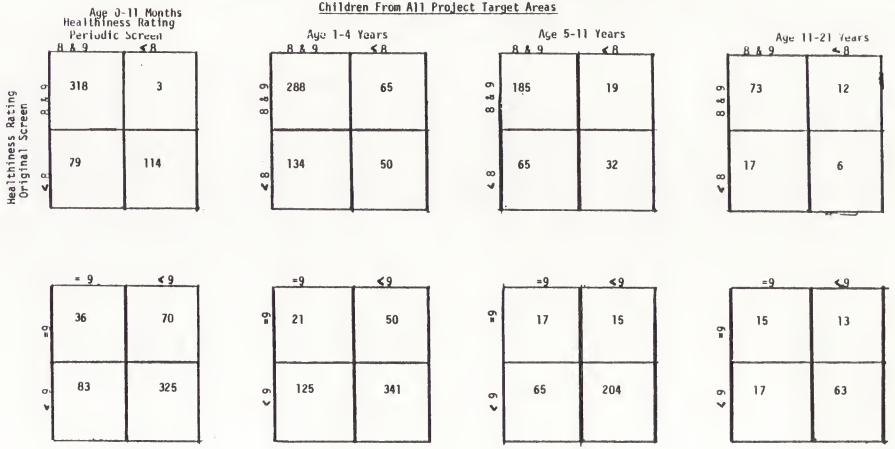
APPENDIX T

Comparison of Healthiness Ratings
on the Original and the Periodic Screen

APPENDIX T. 1

Comparison of Healthiness Ratings on the Original and the Periodic Screen
(Original Screen Rating on the Left; Periodic Rating on the Top)

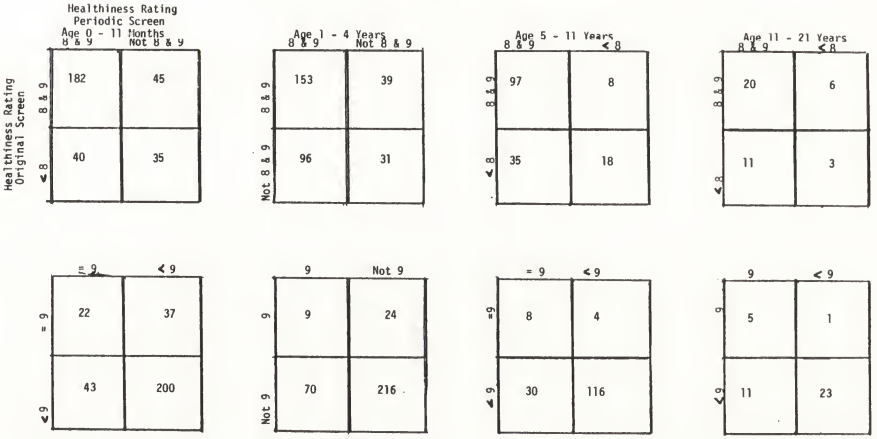
Children From All Project Target Areas



APPENDIX T. 2

Comparison of Healthiness Ratings on the Original and the Periodic Screen
(Original Screen Rating on the Left; Periodic Rating on the Top)

Richmond Children With Multiple Screens Having Healthiness Ratings



APPENDIX U

Staff Attitude Study

STUDY OF STAFF ATTITUDES AT THE CONTRA COSTA EPSDT PROGRAM

Summary of Results

The employees of the Contra Costa County EPSDT program completed questionnaires on their attitudes toward their work. There were three major findings.

The scores on the Job Descriptive Index were very similar to the average scores of the norm group. This indicated an average level of satisfaction for the staff on different aspects of their jobs. The lowest satisfaction expressed was on PROMOTIONS, but this was also the job aspect which the staff ranked as being the least important. The highest satisfaction expressed was by nurses on WORK, and this was also the job aspect nurses ranked on being most important. The community health workers expressed low satisfaction on PAY, and this was the job aspect they ranked as being most important.

The staff indicated a desire to have greater involvement in the organizational functions of the project. The functions in which the staff thought they should have the greatest increase in involvement were planning, evaluation, and decision making. The staff expressed satisfaction with the degree to which they supervised their own work activities.

The responses indicated that there was a poor working relationship between the nurses and the community health workers. The principle reason for this appeared to be that the community health workers received their information on policies and procedures from the project coordinator while the nurses received it from the nurse supervisor. The information passed along to the two groups was apparently different, and this lead to disagreements.

STUDY OF STAFF ATTITUDES AT THE CONTRA COSTA EPSDT PROGRAM

On June 23rd and 24th, 1975, twenty eight of the thirty four employees for the Contra Costa County EPSDT program completed and returned questionnaires on their attitudes toward their work. A copy of the questionnaire is attached. The principle areas assessed were the employees' description of their work duties, their interstaff communication, their job satisfaction, and their opinions of the EPSDT project.

The responses summarized here are grouped by job title. Although there was some difference in work duties between a community health worker II and a community health worker I, these two titles were considered similar enough to be grouped together under the title of community health workers (CHW). Likewise, RNs and pediatric nurse practitioners were grouped together as nurses. There were eleven questionnaires completed by CHWs, eleven by nurses, three by doctors, two by clerks, and one by the project coordinator.

For all of the open ended questions summarized here, the number of employees who made a particular response is stated (N). Since some employees made multiple responses and since responses which were made only once are not listed in the charts, the total number of responses to an item will not always add up to the number of employees. For all items where a numerical score was obtained, the number of forms with scorable responses is stated (N).

Employees' Description of Their Job Activities

Through a series of questions, employees were asked to describe their work activities. The following is a chart of the questions, the responses which were made, and the number of employees' making each response.

	CHW	N	Nurses	N	Doctors	N
List the functions you perform in your role in the project	Outreach	9	Physical exams	9	Examining Patients	3
	Clinic duty	7	Health Education	5	Supervising and advising nurses	3
	Transportation	6	Check Immunization	4		
	Paper work	6	Consult with doctors	3		
	Health Education	4	Making referrals	2		
	Meeting with community groups	4	Follow-up	2		
	Follow-up	4				
List the two most important functions	Outreach	8	Physical exam	8	Education of Staff	2
	Follow-up	7	Health Education	8	Consultation	2
	Clinic duty	5	Making referrals	4		
What activities that you perform are most helpful in reaching project goals?	Outreach	8	Physical exams	5	Evaluating Patients	3
	Follow-up	3	All activities done are helpful	3		
	Health Education	3	Making referrals	2		
	No Response	2				
What activities that you perform are least helpful in reaching project goals?	No response	4	Paper work	8	No Response	2
	Paper work	3	Waiting for patients to show	4		
	All activities are helpful	2	No response	2		
Do you feel you make decisions on your job?	Yes	3	Yes	10	Yes	3
	No	8	No	1	No	0
List the work related decisions you typically make	How and when to make contacts	5	Decide if referral needed	8	If need referral	3
	No response	4	Decide if immunization is needed	4		
			Decide if health education needed	3		
Do you feel you have been involved in planning activities related to your job?	Yes	5	Yes	2	Yes	0
	No	6	No	9	No	3
List specific job related activities you have participated in planning.	Do not help plan any activities	3	No response	5	No Response	2
	Health fairs	2	Physical set-up	3		
	No response	2	Not involved with planning any activities	2		

The community health workers viewed outreach as the most important and helpful activity they perform. Clinic duty, health education, and follow-up were the other duties which community health workers viewed as significant. While paper work was listed most often as being their least helpful activity, almost as many CHWs viewed all the activities they perform as being helpful. Only 27% of the community health workers thought that they made decisions on their jobs. Deciding how and when to make contacts was the area most often mentioned as the one where they did make decisions. About 45% of the community health workers thought that they were involved in planning activities related to their jobs. Planning health fairs was the only area mentioned more than once where community health workers thought they were involved.

The nurses listed physical exams, referrals, and health education as the most important functions they perform. Doing paper work and waiting for patients to show were the activities nurses viewed as being least helpful in attaining project goals. About 91% of the nurses thought that they made decisions on their jobs. They stated that they made decisions on referrals, immunization, and health education. Only about 18% of the nurses thought that they were involved in planning activities. The only area mentioned more than once was the planning of the physical set-up in the clinic.

Doctors listed evaluation of the health of patients and supervision of nurses as the activities they perform which are most important. All of the doctors thought that they made work related decisions, and they listed evaluating the need for referral as an area where they made decisions. None of the doctors thought that they were involved in planning.

The clerks viewed processing records as their most important function. Both of the clerks and the project coordinator thought that they made decisions

on their jobs. Asked if they thought they were involved in planning, one answered "yes", one answered "no", and one did not respond.

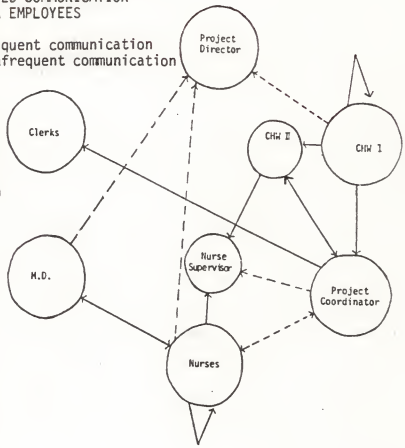
Description of the Interstaff Communication

The employees were asked to list with what staff members they had the most work related contact and with what staff they have the least work related contact. The instructions were to list job titles in order of frequency of contact. For both lists, only the first two job titles mentioned were considered. The staff was also asked who they thought was responsible for revising project procedures and who they would go to for assistance with work related problems. The following are sociograms which illustrate the primary lines of communication.

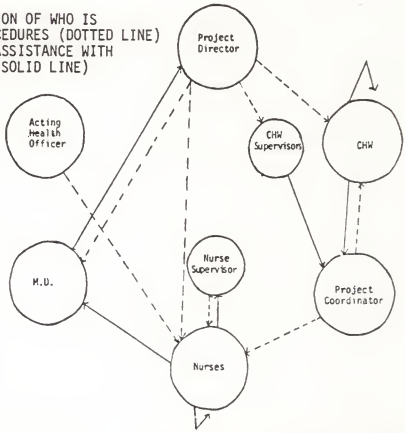
SEE NEXT PAGE

DIAGRAM OF WORK RELATED COMMUNICATION
OF CONTRA COSTA EMPLOYEES

Solid line indicates frequent communication
Dotted line indicates infrequent communication
No line between two groups indicates that neither group listed the other as one with whom they had frequent communication or as one with whom they had infrequent communication



EPSDT STAFF'S PERCEPTION OF WHO IS RESPONSIBLE FOR REVISING PROCEDURES (DOTTED LINE) AND WHO THEY GO TO FOR ASSISTANCE WITH WORK RELATED ISSUES (SOLID LINE)



The community health workers I indicated that their primary staff contact was with the project coordinator, the CHW IIs, and other CHW Is. These were also the people who the community health workers went to for assistance. Eight of the eleven CHWs indicated that their least work related contact was with the project director. The project coordinator was the only person with whom they had frequent contact and whom they also saw as having a role in policy making.

The nurses indicated that their most frequent contacts were with MDs and other nurses. Seven of the eleven nurses indicated that their least work related contact was with the project coordinator. MDs, the nurse supervisor, and other nurses were the persons to whom nurses would go to for assistance with work related problems. The nurse supervisor was the only person listed by nurses as having a role in policy making who they would go to for assistance.

All three doctors indicated that they have frequent work related contact with nurses. The project director was the person doctors viewed as being responsible for policy decisions. Two doctors indicated that they would go to the director with any work related problems, but the director was also listed twice as the person with whom doctors had the least contact. Only one clerk completed these items, so there is no presentation of responses for clerks.

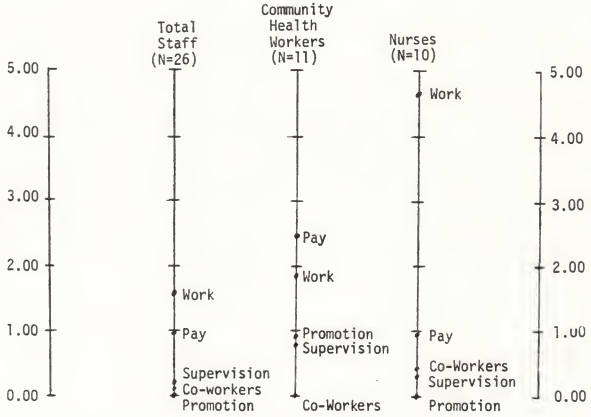
It appeared that there were two groups of employees who had very little communication between one another. One group consisted of doctors, nurses, and the nurse supervisor. The other group consisted of CHWs and the project coordinator. It appeared that neither group had much contact with the project director.

Summary of Data on Ranking Job Aspects

The staff was asked to rank in order of importance the following aspects of their jobs; work, supervision, co-workers, pay, and promotions. Of the 28

questionnaires which were returned, 26 completed this item. There are no scores presented for doctors or clerks because of the small number in each group. The rankings of the total staff, the CHWs, and the nurses are summarized here by use of Thurstone scores. The Thurstone scale is a description of the relative ranking of the items for the individual group considered.

IMPORTANCE OF JOB ASPECTS TO CONTRA COSTA STAFF - THURSTONE SCALE



For the total staff, WORK was ranked highest, PAY was ranked second, and the other three aspects were ranked of low importance. Separating the questionnaires by job title, community health workers ranked PAY highest, WORK was slightly lower, PROMOTIONS and SUPERVISION were almost identical, and CO-WORKERS was last. Nurses ranked WORK much higher than any other job aspect. PAY was second for the nurses, and the other three aspects were ranked low.

Description of Job Descriptive Index Scores for Total Staff

The following are the average scores of the total staff on the Job Descriptive Index. This index is presented in Patricia Cain Smith's book, The Measurement of Satisfaction in Work and Retirement, and is an indication of employees' satisfaction with five different aspects of their work.

JDI SCORES FOR CONTRA COSTA STAFF

Scales	Work	Supervision	Co-Workers	Pay	Promotions
N	22	23	23	22	22
Mean	35.4	40.2	40.1	23.7	7.8
S.D.	7.6	10.3	10.8	14.2	9.1

Since a large majority (90%) of workers are female, these figures were compared with the norms established by Smith for female workers. There were over 600 women in Smith's sample.

NORMS FOR FEMALE EMPLOYEES

Scales	Work	Supervision	Co-Workers	Pay	Promotions
N	638	636	636	635	634
Mean	35.7	41.1	42.9	27.9	17.8
S.D.	9.9	10.0	10.5	13.6	13.4

On WORK and SUPERVISION, the scores for the Contra Costa staff were almost identical to the means of the norm group. The scores on CO-WORKERS and PAY were slightly below the norms. The score on PROMOTIONS was furtner below the norm than the scores of the other four scales, but PROMOTIONS was also the job aspect ranked as least important by the total staff on the Thurstone scale.

Job Title	Work	Supervision	Co-Workers	Pay	Promotions
Community Health Workers (N=9)	32.1	41.0	42.0	18.9	2.9
Nurses	39.4 (N=9)	39.0 (N=10)	40.9 (N=10)	27.8 (N=9)	12.67 (N=9)

The score highest above the norms was the nurses' score on WORK and this was the job aspect nurses ranked as most important. There were three scores more than .5 standard deviations below the norm means. These were the community health workers' scores on PAY and PROMOTIONS, and the nurses' score on PROMOTIONS. Promotions was also the job aspect which nurses ranked as least important.

Description of Staff Satisfaction With Their Degree of Involvement in Organizational Functions

The staff was asked to indicate the degree to which they were involved with seven organizational functions of the project. They indicated this on a ten point scale where zero was to represent no involvement and nine was to represent more involvement than anyone else.

None		Some		Moderate		Great Deal			More than anyone in project
0	1	2	3	4	5	6	7	8	9

The second part of this question asked the staff to indicate, on the same scale, the degree they thought they should have been involved. Following are the average scores on these items for the total staff and for different job groups. For each questionnaire, the difference between the "were involved" score and the "should have been involved" score was computed. The averages of these difference scores are presented here. The difference scores were considered positive where the "should have been" score was larger than the "were involved" score. Because not all workers completed both parts of the questionnaire for all organizational functions, the average difference was not always equal to the difference between the average "were involved" and "should have been" involved scores.

		Communication	Decision Making	Problem Solving	Coordination	Planning	Evaluation	Supervising own work activities
Degree to which were involved	Total Staff	4.0	2.4	3.7	1.9	1.9	2.3	5.9
	CHW (N=11)	4.0	2.0	3.5	1.3	1.8	1.9	4.2
	Nurses (N=11)	3.7	2.8	3.0	2.0	1.6	2.2	6.3
	Doctors (N=3)	3.3	1.7	6.0	3.0	1.7	3.7	8.7
	Clerks (N=2)	7.0	2.5	2.0	1.0	2.5	0.0	8.0
Degree to which should have been involved	Total Staff	5.4	5.5	5.6	4.6	5.1	5.4	6.8
	CHW (N=10)	5.9	5.6	5.7	4.6	5.5	6.1	5.8
	Nurses (N=11)	5.1	5.6	5.7	4.9	5.4	5.3	7.0
	Doctors (N=3)	5.7	4.7	6.3	5.0	4.3	8.0	9.0
	Clerks (N=2)	3.5	-	2.0	0.0	2.5	3.5	6.5
Average Difference	Total Staff	1.3	3.0	1.8	2.6	3.2	3.2	0.4
	CHW (N=10)	1.6	3.4	1.8	3.1	3.6	4.0	1.2
	Nurses (N=11)	1.7	2.8	2.7	2.8	3.7	3.4	0.1
	Doctors (N=3)	2.3	3.0	0.3	2.0	2.7	4.3	0.3
	Clerks (N=2)	-3.5	-	0.0	-1.0	0.0	3.5	-1.5

In every case, the total staff felt they should have had more involvement. The area with the smallest average difference scores was "supervising own work activities." There were eleven average difference scores greater than a difference of three. The scores of the community health workers and nurses indicated that they thought they should have been more involved with planning and evaluation. Both groups indicated that they were involved "some" in these activities and that they should have been involved to a "moderate" extent. This was also the case for the total staff averages on planning and evaluation. The community health workers also thought they should have been involved more with decision making and coordination. Again, they felt they should have been involved to a "moderate" extent. The doctors indicated that they should have been more involved with evaluation. The clerks indicated that they should be less involved in communication. One of the clerks did not complete the second half of the question on decision making. The scores of the clerks on problem solving and coordination

were almost identical, but on the last three job functions, one clerk wanted more involvement and the other wanted less.

The staff was also asked if they were satisfied with their involvement in different aspects of their jobs and with what activities they should be involved. The following is a chart of the questions asked, the responses made, and the number of employees making each response.

	CHW	N	Nurses	N	Doctors	N
Which job activities do you like to perform most?	Outreach Health education Follow-up	5 3 2	Physical exam Health education Like to do all job activities	8 4 2	Consultation	2
What job activities do you like to perform least?	Paper work Interested in all aspects of job No response	4 3 2	Paper work Waiting for patients to show No response	5 2 2		
Do you get the kind of information you need to do your job?	Yes No No Response	7 2 2	Yes No No Response	6 5 0	Yes No No Response	2 1 0
If not what additional information is needed?	Clearer statement of policies	2	Better histories Parents present Clearer statement of policies	2 2 2		
Are you satisfied with the decision making responsibilities you have?	Yes No No Response	5 4 2	Yes No No Response	8 3 0	Yes No No Response	3 0 0
Are you satisfied with the amount of planning involvement you have had?	Yes No No Response	5 5 1	Yes No No Response	3 6 2	Yes No No Response	1 2 0
If not, what additional aspects do you think you should have been involved in planning?	Inservice training	3	Scheduling	3		

	CHW	N	Nurses	N	Doctors	N
If you are not responsible for developing procedures, do you think you should be?	Yes No No response	8 3 0	Yes No No response	10 1 0	Yes No No response	2 0 1
Why?	Know what the clients want All staff should have a part No response	5 2 2	Know what clients need We implement the procedures All staff should have a part No response	3 3 2 2	In a position to make suggestions	2
Do you think that you are accomplishing personal goals by working in the project	Yes No No response	9 2 0	Yes No No response	11 0 0	Yes No	2 0
Why?	Help community Gaining experience Earning an income	7 2 2	Gaining experience Help community	7 4	Helping low income families	2

Although the community health workers specifically listed outreach, follow-up, and health education as the work activities they enjoyed most, their comments indicated that what they enjoyed was talking with people out in the community. Paper work was listed by about a third of the community health workers as the work activity they enjoyed least, while one fourth of the CHWs stated that they enjoyed all their job activities. About 64% of the CHWs thought that they got the kind of information they needed to do their job. Two CHWs indicated that they wanted a clearer statement of procedures by the management level people. About 45% of the CHWs indicated that they were satisfied with their decision making responsibilities, but few specific comments were made by those who indicated that they were not satisfied. Generally, the comments stated the desire to be involved with the decisions affecting the project operation.

About 45% of the CHWs also expressed satisfaction with the amount of planning involvement they have had. Inservice training was the area listed most often as one where CHWs thought they should be involved. About 73% of the CHW thought that they should have some responsibility for developing procedures. The reason given most often why they should be involved was that by being out in the community they had a better idea of conditions at the homes and of what the clients want. About 82% thought they were accomplishing personal goals by working at the project. The reason most often given was that their work allowed them to help the community.

Physical exams and health education were the activities nurses most enjoyed doing, and paper work and waiting for patients to show were the ones they least enjoyed. About 55% of the nurses thought that they got the kind of information they needed to do their jobs. About 73% indicated that they were satisfied with their decision making responsibilities. Only 27% of the nurses were satisfied with the amount of involvement they had in planning activities and scheduling was the aspect listed most often where they thought they should have been more involved. About 91% of the nurses thought they should have some responsibility for developing procedures. The reasons listed most often why they should have such responsibility were that they know what the clients need and that they are the ones who implement the procedures. All of the nurses thought they were accomplishing personal goals. The reasons given were that they were gaining experience and were helping the community.

Doctors indicated that consultation was the activity they enjoyed most. One doctor did not respond to the question about what job activity do you enjoy least. The two responses which were received were immunization and paper work. Doctors indicated that they received the information they needed to do their

job and were satisfied with their decision making responsibilities. They indicated that they were not satisfied with their involvement in planning activities and thought that they should be involved in revising procedures. Two of the three thought that they were accomplishing personal goals by working in the project.

The clerks made few comments on these questions. Neither responsed to the questions on what job activity they enjoy most and which they enjoy least. Both clerks indicated that they were satisfied with their decision making responsibility and their involvement in planning. Neither thought that they should be involved in developing procedures. One indicated that he was accomplishing personal goals and the other indicated that he was not.

Staff's Opinions of the EPSDT Project

Through a series of questions, the staff was asked to evaluate the EPSDT program in Contra Costa. The following is a chart of the questions asked, the responses made, and the number of times each response was made.

	CHW	N	Nurses	N	Doctors	N
Do you think a project like EPSDT is needed in the County?	Yes	11	Yes	11	Yes	3
	No	0	No	0	No	0
Why?	Increases awareness of need for health care	4	Provides care for people who can't afford it.	8	Provides screens for those who would not receive it otherwise	3
	Help those not otherwised helped	4	Early diagnosis	2		
	Early diagnosis	3				
List the most important things the EPSDT program is trying to accomplish.	Preventive health care	8	Screening for early diagnosis	11	Early diagnosis	3
	Health education	7	Health education	7	Referrals	2
	Increases awareness of need for health care	4	Referral	7		
			Follow-up	4		
			Help needy	4		
	Research	3	Importance of health care	3		
	Job opportunities	2				

	CHW	N	Nurses	N	Doctors	N
Do you get enough information about what the project is accomplishing?	Yes No No Response	7 3 1	Yes No No Response	4 7 0	Yes No No Response	2 1 0
If not, what additional information would be useful to you.	Monthly report	2	Follow-up Number of problem detected	3		
What is the main reason why clients do not keep their appointments?	Need transportation Other, more pressing problems Don't realize importance Forget appointments Bad experience with other health care facilities	6 4 3 3 2	Not motivated toward preventive health care Other, more pressing problems Not use to planning time	9 4 2	Not motivated toward preventive health care	3
List any suggestions you may have for improving services.	More inservice training Better staff relations More clerical assistance More workers Better building Better supplies	4 4 3 2 2 2	Better follow-up Better staff relations Better forms Media campaign Better scheduling	4 4 3 2 2	Not screen people with previous source of medical care	2

All the staff indicated that they thought that a project like EPSDT was needed. The reason most often given was that it provided health care for people who would not receive it otherwise.

The community health workers stated that providing preventive health care and giving health education were the most important goals of the program. other goals listed by the CHWs were research, job opportunities, and increased awareness of need for health care. About 64% thought that they received enough information about what the project was accomplishing. Two CHWs asked for a monthly report to provide information on the project's progress. Lack of transportation and family problems more important than well child care were the

reasons for community health workers listed for why clients did not keep appointments. The CHWs thought that more inservice training with a certificate on completion or college credit, more clerical workers, and better staff relations would improve services.

Nurses viewed screening, health education, and referrals as the most important goals of the EPSDT program. About 36% of the nurses thought that they received enough information about what the project is accomplishing. Additional information on follow-ups and on the number of problems found was requested. The comments of the nurses indicated that they wanted to know what the project has actually done in terms of community usefulness. The reason most frequently given why clients did not show was that they were not motivated toward preventive health care. This was also the reason given by the doctors. Nurses listed better follow-up, staff relations, and forms to improve the EPSDT services.

Doctors viewed early diagnosis and appropriate referrals as the most important goals of the EPSDT PROGRAM. Two doctors suggested that the clients be more carefully selected so that those with a previous source of medical care would not be screened.

Only one clerk made any suggestions. They were to have a media campaign about the project and to keep the clients from having to wait as long.

Relations Between Community Health Workers and Nurses

Other suggestions made by the staff referred to the poor relations which existed between the CHWs and the nurses. Comments about this situation appeared in many of the open ended questions, but it is discussed here so as not to overshadow other information contained in the questionnaires.

About 73% of the nurses mentioned their poor relations with the community health workers. The comments indicated the need for better cooperation, better

communication, and more training of CHWs. About 45% of the nurses specifically mentioned that they thought they should have a role in the supervision of the CHWs. About 46% of the community health workers mentioned the poor relations. Their comments indicated the need for more cooperation for a clearer statement of policies, and for more support from administrative personnel.

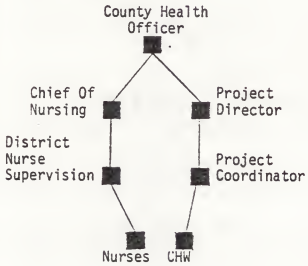
Summary and Discussion of Results

The community health workers viewed their primary role as one of talking to and assisting the people in the community. The nurses and doctors viewed physical evaluation as their primary job functions. While both nurses and community health workers listed paper work as the job function they liked doing least, a larger percentage of nurses than community health workers listed it as the activity least helpful in reaching project goals. This finding pointed out the importance in EPSDT projects for forms which the employees find workable and for a thorough explanation to the employees of the significance of the information gathered.

On four of the five job aspects, the Contra Costa employees expressed about the same satisfaction as the norm group. The exception occurred on PROMOTIONS, but this was also the job aspect the staff ranked as being least important. The highest job satisfaction score was the nurses' score on WORK, and the two lowest were the CHWs scores on PAY and PROMOTIONS. The score on PROMOTIONS was understandable because of the limited number of job positions above them to which they can be promoted. There was no indication in the questionnaire why the community health workers considered their pay low.

The staff expressed the desire for greater involvement in all organizational functions of the project. These functions included communication, decision making, problem solving, coordination, planning, and evaluation.

There was a poor working relationship between nurses and community health workers. The importance of this finding is not that a problem was found, but rather in identifying its causes. In this way, future EPSDT sites can be aware that organizational changes may be needed to avert this problem instead of attempting to correct it after it occurs. The survey identified several factors which contributed to the problems. The major one seemed to be that the two groups received supervision from different people. The only person the nurses saw as having a responsibility for revising procedures and with whom they had frequent contact was the nurse supervisor. The community health workers received supervision from the project coordinator. These two persons, the nurse supervisor and the project coordinator, represent two different branches of the county health department. The following is a rough organizational chart of the job positions involved.



This lack of a single supervisor for all workers resulted in the two groups receiving conflicting information on policies. As long as two groups are under independent supervision, the resolution of problems that arise is more difficult. At this particular site, the questioning by the nurses of the clerical skills

and training for health education of the community health workers was an issue which might not have been as serious had a single supervisor had the authority to intervene.

2490 CHANNING WAY, BERKELEY, CALIFORNIA 94704
(415) 843-0192

June 23, 1975

Dear Staff Member:

As you know, the Contra Costa County Health Department has a contract with the University of Texas Medical School to evaluate the County's Early Periodic Screening, Diagnosis, and Treatment Program. It is hoped that these evaluation studies will result in suggestions on how to plan and manage the best possible EPSDT program for young people. The results of the evaluation should be very helpful in planning high quality service, both for Contra Costa residents and for residents of similar counties throughout the rest of the United States.

Under our sub-contract with the University of Texas, we have been asked to gather some evaluation information on the organizational aspects of the EPSDT program. Inorder to obtain this information, we have prepared the attached questionnaire and are requesting your assistance in getting the questionnaires completed. We feel that the perspectives and opinions of you who are so close to the operation of the program will be invaluable data to use in completing the organizational study of the EPSDT program.

So that we will have a perspective of all organizational levels in the program, this brief questionnaire is being given to all staff in the project (the Project Director, Project Coordinator, and other project staff operating in both East and West County clinics).

Your assistance is very much appreciated and will help us to make recommendations for improving the EPSDT program on a nation-wide basis. As the results of the survey are to be presented anonymously, your name is <u>not</u> requested on the questionnaire.

Yours Very Truly,

Rod Gardner

Rodney H. Gardner
Associate

RHG:ss

EPSDT PROJECT

ORGANIZATIONAL SURVEY

JOB TITLE _____ DO YOU WORK: IN CLINIC___ MARTINEZ_____

LENGTH OF TIME ON PROJECT _____ BOTH_____ OTHER_____

DO YOU GET YOUR PRIMARY____ OR SECONDARY_____ INCOME FROM YOUR JOB WITH THE PROJECT?

HIGHEST GRADE COMPLETED IN SCHOOL _____ AGE___ SEX____MARITAL STATUS_____

INTRODUCTION

ON THE FOLLOWING PAGES WE WOULD LIKE TO GET YOUR OPINIONS AND PERCEPTIONS CONCERNING SEVERAL ELEMENTS OF THE ORGANIZATION OF THE EPSDT PROJECT.

THE FIRST PART OF THE SURVEY CONTAINS A LIST OF WORDS AND PHRASES RELATED TO THE ORGANIZATIONAL ELEMENTS OF THE WORK YOU DO, THE SUPERVISION YOU RECEIVE (FROM THE PERSON WHOM YOU PERCEIVE TO BE YOUR SUPERVISOR), YOUR CO-WORKERS, YOUR PAY, AND YOUR PERCEPTIONS OF PROMOTIONAL OPPORTUNITIES IN THE COUNTY. WOULD YOU PLEASE INDICATE WHETHER EACH WORD OR PHRASE UNDER EACH CATEGORY APPLIES TO YOUR PERCEPTION OF THE PARTICULAR ASPECT OF THE ORGANIZATION BEING SURVEYED (E.G., WORK, PAY, CO-WORKERS, ETC.). USING THE PAY CATEGORY AS AN EXAMPLE, IF A WORD OR PHRASE APPLIES TO YOUR PAY, PLEASE WRITE "Y" (FOR YES) BESIDE THE WORD. IF A WORD OR PHRASE DOES NOT APPLY TO YOUR PAY, PLEASE WRITE "N" (FOR NO) BESIDE THE WORD. IF YOU CAN NOT DECIDE, PLEASE ENTER A QUESTION MARK (?) BESIDE THE APPROPRIATE WORD OR PHRASE. WHEN YOU HAVE FINISHED THE FIRST PART OF THE SURVEY, EVERY WORD OR PHRASE SHOULD HAVE EITHER A "Y", "N", OR "?" BY IT.

WORK

_____ Fascinating

_____ Routine

_____ Satisfying

_____ Boring

_____ Good

_____ Creative

_____ Respected

_____ Hot

_____ Pleasant

_____ Useful

_____ Tiresome

_____ Healthful

_____ Challenging

_____ On your feet

_____ Frustrating

_____ Simple

_____ Endless

_____ Gives sense of accomplishment

SUPERVISION

_____ Asks my advice

_____ Hard to please

_____ Impolite

_____ Praises good work

_____ Tactful

_____ Influential

_____ Up-to-date

_____ Doesn't supervise enough

_____ Quick-tempered

_____ Tells me where I stand

_____ Annoying

_____ Stubborn

_____ Knows job well

_____ Bad

_____ Intelligent

_____ Leaves me on my own

_____ Lazy

_____ Around when needed

CO-WORKERS

_____ Stimulating

_____ Boring

_____ Slow

_____ Ambitious

_____ Stupid

_____ Responsible

_____ Fast

_____ Intelligent

_____ Easy to make enemies

_____ Talk too much

_____ Smart

_____ Lazy

_____ Unpleasant

_____ No privacy

_____ Active

_____ Narrow interests

_____ Loyal

_____ Hard to please

PAY

_____ Income adequate for normal expenses

_____ Satisfactory share of County's payroll

_____ Barely live on income

_____ Bad

_____ Income provides luxuries

_____ Insecure

_____ Less than I deserve

_____ Highly paid

_____ Underpaid

PROMOTIONS

_____ Good opportunity for advancement

_____ Opportunity somewhat limited

_____ Promotion on ability

_____ Dead-end job

_____ Good chance for promotion

_____ Unfair promotion policy

_____ Regular promotions

_____ Fairly good chance for promotions

Rank the following organizational elements as to their importance to you, with the most important term being #1, second most important #2, and so forth. There should be one number for each blank. Please do not duplicate numbers, that is, try not to have the same ranking for any two or more elements.

_____ Work

_____ Pay

_____ Supervision

_____ Co-Workers

_____ Promotions

THE FOLLOWING QUESTIONS IN PART II OF THE SURVEY ASK FOR A BRIEF WRITTEN STATEMENT CONCERNING YOUR PERCEPTIONS AND OPINIONS OF CERTAIN ORGANIZATIONAL ELEMENTS OF THE PROJECT. PLEASE ANSWER THE QUESTIONS FROM YOUR POINT OF VIEW. SINCE WE WOULD LIKE TO GET A PICTURE OF THE PROGRAM AS YOU SEE IT, AVOID USING PHRASES FROM THE PROJECT PROPOSAL, IF YOU ARE FAMILIAR WITH IT.

1. Please list the four (4) most important things you think the EPSDT project is trying to accomplish and place them in priority order:

   - _____
   - _____
   - _____
   - _____

2. Do you think that a project like EPSDT is needed in the County?

   ____Yes. Please explain why you think it is needed: _____

   ____No. Please explain: _____

3. Do you think that you get enough information about what the project is accomplishing with the clients?

   ____Yes

   ____No. What additional information would be useful to you? _____

4. Do you think that you get the kind of information you need to do your job in the project?

_____ Yes

_____ No. What additional information do you think you need? _____

5.a. Briefly list the functions you perform in your role in the project: _____

b. List the two most important functions involved in your role:

- _____
- _____

6.a. Do you feel that you make decisions on your job in the project?

_____ Yes

_____ No

b. Please list the work related decisions you typically make in your job:

c. Are you satisfied with the decision making responsibility you have in your job?

_____ Yes

_____ No. List the kinds of additional job related decisions you think you should be involved in: _____

7. When work related issues come up that you think you need assistance in deciding, to whom do you go for assistance (give job title)?

_____

8.a. Do you feel that you have been involved in planning activities related to your job?

_____ Yes

_____ No

b. Please list the specific job related activities you have participated in planning?

_____

_____

_____

_____

c. Are you satisfied with the amount of planning involvement you have had?

_____ Yes

_____ No. What additional aspects of the project do you think you should have been involved in planning? _____

_____

_____

9.a. With what other staff in the project do you have the most work related contact? (List their job titles and list in order of frequency of contact.)

- _____
- _____
- _____
- _____

b. With what other project staff do you have the least work related contact? (Please list by job title.)

- _____
- _____
- _____
- _____

10. Do you think that you are accomplishing personal goals by working in the project?

____ Yes. Please list: _____

____ No. Please explain why not? _____

11. What do you think is the main reason why clients do not keep their clinic appointments for screening? _____

12.a. Who in the project has the responsibility to revise an existing procedure or develop new project procedures when needed? (Please list title(s).)

b. If you are not responsible for developing or revising procedures, do you think you should be?

____ Yes. Why? _____

____ No. Why? _____

13.a. Please indicate the extent to which you are involved in the following basic organizational functions: (Circle the appropriate number on the line.)

	None		Some		Moderate		Great Deal		More than anyone in project
Communication:	0	1	2	3	4	5	6	7	8	9
Decision Making:	0	1	2	3	4	5	6	7	8	9
Problem Solving:	0	1	2	3	4	5	6	7	8	9
Coordination:	0	1	2	3	4	5	6	7	8	9
Planning:	0	1	2	3	4	5	6	7	8	9
Evaluation:	0	1	2	3	4	5	6	7	8	9
Any revision of work activities:	0	1	2	3	4	5	6	7	8	9

5. Please indicate the extent that you think you should have been involved in the following basic organizational functions: (Circle the appropriate number.)

	None			Some		Moderate		Great Deal		More than anyone in project
Communication:	0	1	2	3	4	5	6	7	8	9
Decision Making:	0	1	2	3	4	5	6	7	8	9
Problem Solving:	0	1	2	3	4	5	6	7	8	9
Coordination:	0	1	2	3	4	5	6	7	8	9
Planning:	0	1	2	3	4	5	6	7	8	9
Evaluation:	0	1	2	3	4	5	6	7	8	9
Supervising Own Work Activities:	0	1	2	3	4	5	6	7	8	9

14.a. What activities that you perform are most helpful in reaching the project's goals and objectives? _____

_____

_____

_____

b. Which activities are the least helpful in reaching the project goals and objectives?

_____

_____

_____

_____

15.a. Which of your job activities do you like to perform most? _____

_____

_____

_____

_____

b. Which job activities do you like to perform least? _____

_____

_____

_____

_____

16. Please list any suggestions you might have for improving the services provided by the EPSDT project: _____